1954 CENSUS OF MINERAL INDUSTRIES

PRELIMINARY REPORTS

SUMMARY STATISTICS
AND
MAJOR GROUPS 10 - 14

INDUSTRY DIVISION
BUREAU OF THE CENSUS

nis room









Reference Copy

Bureau of the Census Library



U.S. DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS Washington 25, D.C.

ADVANCE ANNOUNCEMENT AND ORDER FORM

1954 CENSUS OF MINERAL INDUSTRIES - PRELIMINARY REPORTS

Series MI - Presents preliminary statistics on shipments of mineral products; value added in mineral production; number of employees; wages, salaries, cost of supplies and materials, fuels, purchased electric energy, and contract work; capital expenditures; horsepower rating of power equipment; and water intake.

This series includes 34 reports for specified mineral industries which will usually contain two tables. The first of these tables will show, wherever possible, information specified above for the Census years 1919, 1929, 1939, and 1954. The second table will show the same information for 1954. by geographic division or State. The series also includes a report showing bituminous coal distribution statistics.

The series contains a summary report showing such statistics for all mineral industries combined, by geographic division and major producing States for 1954 and 1939. This report will also show separate 1954 figures for major mineral industry groups within each geographic division.

These preliminary reports are priced at either 10 or 20 cents each. A charge of \$2.25 will be made for one complete set of the reports listed below.

Payment must be included with your order. Make checks or money orders payable to Census, Department of Commerce. Government Printing Office coupons, or authorizations to charge the amount to your account with the Superintendent of Documents will also be acceptable. In the last instance, please report your account number. Coins and currency are sent at the sender's risk. Postage stamps, foreign money, or defaced or smooth coins are not acceptable. Your orders should be addressed to: The Bureau of the Census, Washington 25, D.C. or to any U.S. Department of Commerce Field Office.

An order blank showing the series, title, and charge for each report is printed below for your convenience in placing your order.

Please check the publications you wish to pur-Return this order blank with payment enchase.

| | UER DLAI | AL | closed D.C., | , to: Bureau of the Census or any U.S. Dept. of Commo | s, Washington 25, erce Field Office. |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------|
| | All Mineral Industri | | | leases - \$2.25 | |
| Series | Title Pr | rice S | eries | · Title | Price |
| MI-10-2 MI-10-3 MI-10-4-1 MI-10-4-2 MI-10-4-3 MI-10-5 MI-10-6-1 MI-10-6-3 MI-11-1 MI-11-2 MI-12-1 MI-12-2 MI-13-1 MI-13-1 MI-13-3 MI-13-3 | Iron ores | .10 | MI -14 -1 MI -14 -2 MI -14 -2 MI -14 -5 -1 MI -14 -5 -1 MI -14 -7 -1 MI -14 -7 -2 MI -14 -7 -3 MI -14 -7 -3 MI -14 -7 -6 MI -14 -7 -6 MI -14 -9 -1 MI -14 -9 -2 MI -14 -9 -3 MI -14 -9 -3 MI -14 -3 Cked on th | Dimension stone | |
| | NAME AND ADDRESS | (Please | print or | tyne) | Charge my . |
| Name | | (2.2000) | FIRE SI | ./ | Superintendent of Documents Account: |
| Lareet and num | ber | | | | |
| City and State | | Marin | | Zone | No |



GROUP 13



1954 Census of Mineral Industries

December 1956 Series: MI-14-3

SUMMARY STATISTICS: GEOGRAPHIC DIVISIONS AND STATES

The largest mineral producing State in 1954 was Texas. The value of shipments for all mineral industries in Texas was \$4.3 billion, amounting to 29 percent of the total for all States. The total number of employees at mineral operations in Texas was 128 thousand, or 17 percent of the total for all States. In terms of value of shipments the second ranking State was California, with shipments of \$1.5 billion and employment of 38 thousand. The next ten ranking States in order of importance, as measured by value of shipments, were Louisiana, Pennsylvania, Oklahoma, West Virginia, Illinois, Kansas, New Mexico, Kentucky, Minnesota, and Wyoming. In terms of employment, the ranking was somewhat different, reflecting the much higher labor requirements per dollar of shipments for coal mining than for oil and gas field operations. Ranked in terms of employment, Pennsylvania was second, with employment of 102 thousand, and value of shipments of \$1.1 billion, and the next ten ranking States were West Virginia, Kentucky, California, Oklahoma, Louisiana, Illinois, Ohio, Kansas, Michigan, and Minnesota.

For metal mining the first three ranking States in terms of value of shipments were Minnesota, Utah, and Arizona and in terms of employment, Minnesota, Arizona, and Michigan. The State of Minnesota alone accounted for 22 percent of all value of shipments from metal mining operations, Arizona accounted for 14 percent, and the other Mountain States combined accounted for 37 percent.

For coal mining the first three ranking States in terms of both value of shipments and employment were Pennsylvania, West Virginia, and Kentucky. The value of shipments in Pennsylvania, which accounted for 35 percent of the United States total, included \$454 million for bituminous coal mining and \$409 million for anthracite mining. West Virginia accounted for 26 percent of the total value of coal mine shipments, Kentucky for 11 percent, and the East North Central States for 15 percent.

For crude petroleum and natural gas extraction the first three ranking States, in terms of value of shipments, were Texas, California, and Louisiana, and in terms of employment, Texas, Oklahoma, and Louisiana. Texas alone accounted for 45 percent of the total value of shipments for these industries, the other three West South Central States accounted for 20 percent, and California accounted for 14 percent.

For the nonmetallic minerals, except fuels, mining industries, the first three ranking States were California, Texas, and Florida in terms of value of shipments, and California, Pennsylvania, and Texas in terms of employment. However, there was little concentration in these industries, California accounting for only 9 percent of the total value of shipments. The three highest ranking Geographic Divisions were the South Atlantic States with 18 percent of the total value of shipments, the East North Central States, with 17 percent, and the West South Central States, with 16 percent.



JU. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

COVERAGE OF THE CENSUS. -- The 1954 Census of Mineral Industries covers all known establishments primarily engaged in producing minerals or in developing mineral properties except very small establishments and certain noncommercial operations. Small establishments were excluded if the value of shipments and services performed for others in 1954 amounted to less than \$500, or if reported expenditures were less than this amount. The production of minerals, such as stone, sand, and gravel by Federal, State, and local governments is also excluded, as is the production of such items by highway contractors and manufacturing plants for their own use if they did not maintain separate records for the mining activities. The census includes, however, mining establishments operated entirely to serve other establishments of the same company, such as mines or wells serving only coke ovens, smelters, refineries, and public utilities operated by the same company.

The minerals census covered establishments meeting the value criteria whether or not they had employees. The mailing lists available, however, for establishments for which all labor was furnished by proprietors or contractors were somewhat less complete than those for establishments with employees. In general, it is believed that the 1954 minerals census reports provided essentially complete coverage of production and development operations. However, coverage of the crude petroleum and natural gas extraction industries probably amounted to only about 97 percent of the total value of shipments and this undercoverage appears to have reduced the over-all minerals census coverage to about 98 percent. Undercoverage was more significant for a few States, particularly for Mississippi and Arkansas, where the apparent coverage of all mineral operations in the State was only 95 percent, and in Oklahoma, where it may have been only 93 percent.

INDUSTRY CLASSIFICATION. -- The mining industries, as defined in the Standard Industrial Classification, represent establishments primarily engaged in the extraction of minerals occurring naturally. They include exploration and development of mineral properties and contract service establishments primarily engaged in work on mineral properties. In general, crushing, screening, washing, concentration, and other preparation operations needed to render the material marketable are included, whether or not the preparation plants are located at the mines served. Such activities as smelting of metallic ores, petroleum refining, and production of cement and clay products are excluded and classified in the manufacturing industries.

Mining operations which are carried on as secondary activities at manufacturing or other nonmining establishments such as stone quarries at cement, lime, and dimension stone dressing plants, and clay pits at structural clay products and pottery plants, and gypsum mines at gypsum products plants are not within the scope of the minerals census. The approximate value of such excluded mineral production in 1954 was \$320 million, all of which represents mineral products for which the primary production is classified in the major group, Nonmetallic Minerals, Except Fuels, Mining.

In the minerals census, reports were obtained for the operations of an entire establishment, showing the output of mineral products; operating and development costs; and labor, mechanical equipment, and materials requirements. A mineral establishment is generally defined as a single physical location where mineral operations are conducted as a unit or are unified by common management or joint handling of some part of the mining or preparation process. For oil and gas field operations, only one report was required for all oil and gas field operations of a reporting company in each State. For mineral contract service operations, only one report was required for all such operations in the United States. (These reports were classified on the basis of the principal State in which the service was performed).

Mining operations were classified by industry on the basis of the value of the principal mineral produced or, if there was no production, on the basis of the principal mineral for which exploration or development work was in process. For most mineral industries, secondary products are of little statistical importance.

NUMBER OF EMPLOYEES.--The figures for number of employees represent an average of 12 monthly figures for the payroll ending nearest the 15th of each month, or for the major group, Crude Petroleum and Natural Gas Extraction, an average of 4 quarterly figures for the payroll ending nearest the 15th of March, May, August, and November.

Separate figures are shown for "production and development workers" and for "all other employees." These figures exclude data for proprietors and firm members of unincorporated concerns, whether or not they performed manual labor.

The figures for employment in each major group include employees of contractors which performed services such as strip mining and oil well drilling for the mineral industries of the group.

The figures for "production and development workers" represent employees up through the working foreman level engaged in manual work, using tools, operating machines, hauling materials, loading and hauling products out of the mine in mine cars or trucks, and caring for mines, plants, mills, shops, or yards. The figures include miners paid on a per ton, car, or yard basis and the men engaged by them and paid out of the total amount received by these miners.

WAGES AND SALARIES. -- The figures for total wages and salaries represent the gross earnings paid in the calendar year to all employees on the payroll of mining establishments. They include all forms of compensation such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind; prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds.

MAN-HOURS OF PRODUCTION AND DEVELOPMENT WORKERS.--The man-hour figures represent all hours actually worked by production and development employees both on days when the mines were active for production or development work and on inactive days when only watchmen, inspectors, repairmen, and other maintenance men were on duty. They exclude hours for paid vacations, holidays, or sick leave when the employee was not actually at the mine. Included are actual overtime hours, not straight time equivalent hours. Man-hours of working proprietors, however, are excluded.

VALUE OF SHIPMENTS.--The value of shipments figures represent the value of all products physically shipped from the establishment during the year, including material withdrawn from stockpiles, and products shipped on consignment whether or not sold in 1954. For each industry, they include the value of all "primary" products of the industry, the value of "secondary" products which are primary to other industries, the receipts for contract work done for others (except custom milling), and the value of products purchased and resold without further processing.

The value of shipments figures for 1954 represent "gross" shipments and contain some duplication due to the inclusion of the value of materials transferred from one establishment to another for mineral preparation as well as the value of the prepared material produced therefrom either for the account of the reporting company or on a custom or toll basis for others. For all mineral industries, this duplication in 1954 amounted to less than 4 percent; however, it was more significant in metal mining and coal mining, amounting to about 11 percent for all metal mining, for anthracite mining amounting to 29 percent, and for bituminous coal and lignite mining to 13 percent.

VALUE ADDED IN MINING. -- This measure is computed by subtracting the cost of supplies, fuel, minerals received for preparation, purchased electric energy, contract work, and purchased machinery from the value of shipments and capital expenditures. Such a measure avoids the duplication in value of shipments which results from the use of products of some establishments as supplies, energy sources, or materials for others. Moreover, it provides a measure not only of value added in mineral production but also in the development in mineral properties.

CAPITAL EXPENDITURES.--These figures represent capitalized expenditures made during 1954 for development and exploration of mineral properties, for new construction, and for new and used machinery that were chargeable to fixed assets accounts of the mining establishments and were of a type for which depreciation, depletion, or Defense Minerals Exploration Administration accounts are ordinarily maintained. For each industry, the capital expenditures include work done on contract as well as by the mine forces. Excluded are costs of maintenance and repairs charged as current operating expense and expenditures for land and mineral rights.

GENERAL. -- These statistics are derived from preliminary and, in part, from final tabulations of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "General Summary" and in the bulletins for individual States, which will be published and offered for sale by the Superintendent of Documents within the next few months. More detailed figures for the individual industries have been published in the preliminary releases for specific industries or groups of industries. Additional detail, by industry, is included in the final industry bulletins which are now being issued.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census in cooperation with the Bureau of Mines (U. S. Department of Interior) to minimize duplication in canvassing mineral establishments. The two agencies cooperated for industries for which the Bureau of Mines had been conducting annual commodity surveys and the Census report form used for such industries also provided the information required by the Bureau of Mines for its annual statistics on these commodities. The Bureau of Mines acted as collection agent for about one-third of the establishment reports for the 1954 minerals census; this collection covered most of the establishments in the metal mining and coal mining industries and about one-half of the establishments in the nonmetallic minerals, except fuels, mining industries. The Bureau of the Census collected all reports for multi-establishment companies and all reports for the crude petroleum and natural gas, stone, clay, and certain other nonmetallic minerals industries.

(Excludes establishments with value of production and with expenditures less than \$500. For explanation of column captiona are text)

| (Excludes establishments with value of | production an | d with expendi | tures less ti | nan \$500. For | explanation | or column car | otiona aee te | Xt) |
|------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------|--------------------|---------------------|------------------------|--------------------|---------------------|----------------------------------|
| | | | Number of | employees | Man-hours Worked by | Wages and | salaries | |
| Tadustan sucur seconomia | Value of | Value added in | Production | 411 04000 | production | Production | All athor | Capital expendi |
| Industry group, geographic division, and State | shipments | mining | and development | All other employees | and development | and development | All other employees | turea |
| | (42,000) | (43,000) | workers | | workers | workers | (42,000) | (42.000) |
| | (\$1,000) | (\$1,000) | | | (1,000) | (\$1,000) | (\$1,000) | (\$1,000) |
| United States, total | 114,800,810 | ¹ 11,455,056 | 644,965 | 109,273 | 1,248,287 | 2,567,884 | 628,644 | 2,680,871 |
| Metal mining | ¹ 1,505,008 408,720 | 11,074,725 | 81,702 | 16,156 | 167,912 | 352,537 | 95,288 | 220,437 |
| Bituminous coal and lignite mining | 2,062,590 | 197,535 1,418,595 | 33,058 199,548 | 2,856 15,959 | 48,282 325,123 | 114,042 763,039 | 13,794 88,454 | 10,716 |
| Crude petroleum and natural gas extraction | 9,242,926 | 7,582,620 | 233,616 | 58,771 | 492,249 | 974, /93 | 350,484 | 2,182,435 |
| Normetallic minerals, except fuels, mining | 1,581,566 | 1,181,581 | 97,041 | 15,531 | 214,721 | 363,473 | 80,624 | 146,996 |
| New England, total | 41,321 | 32,085 | 3,454 | 494 | 7,588 | 12,404 | 2,292 | 4,224 |
| | | | 200 | | | 822 | 120 | |
| Metal mining Nonmetallic minerals, except fuels, mining | 2,393 38,928 | 1,697 30,388 | 3,254 | 17 477 | 487 7,101 | 11,582 | 2,172 | 86 4,138 |
| Maine ² New Hampshire ² | 2,176 | 1,805 | 290 | 22 | 611 | 831 | 65 | 359 |
| New Hampshire ² | 1,980 | 1,658 | 240 | 26 | 481 | 723 | 117 | 262 |
| Vermont, total | 14,427 | 10,601 | 1,187 | 142 | 2,633 | 4,153 | 790 | 686 |
| Metal mining | 2,305 | 1,602 | 193 | 17 | 473 | 798 | 120 | 71 |
| Normetallic minerals, except fuels, mining | 12,122 | 8,999 | 994 | 125 | 2,160 | 3,355 | 670 | 615 |
| Massachusetts ³ | 11,577 1,447 | 8,925 1,109 | 992 140 | 157 23 | 2,142 284 | 3,772 461 | 632 94 | 1,597 221 |
| Connecticut ² | 9,714 | 7,987 | 605 | 124 | 1,437 | 2,464 | 594 | 1,099 |
| Middle Atlantic, total | 1,232,117 | ¹ 770,045 | 105,112 | 11,006 | 177,439 | 392,693 | 59,829 | 75,331 |
| Metal mining | 75,254 | ¹ 49,958 | 5,152 | 1,590 | 10,003 | 22,918 | 10,801 | 5,502 |
| Anthracite mining Bituminous coal and lignite mining | 408,720 454,217 | 197,535 301,345 | 33,058 46,311 | 2,856 3,823 | 48,282 74,423 | 114,042 175,765 | 13,794 21,548 | 10,716 23,180 |
| Crude petroleum and natural gas extraction Nonmetallic minerals, except fuels, mining | 101,150 192,776 | 72,492 148,715 | 8,196 12,395 | 895 1,842 | 16,406 28,325 | 28,183 51,785 | 3,502 10,184 | 19,7 57 16,1 76 |
| | 128,122 | | 7,622 | 1,886 | 16,877 | 35,203 | 12,190 | |
| New York, total | | 96,629 | | | | | | 12,369 |
| Metal mining Crude petroleum and natural gas extraction | 42,482 11,273 | 27,945 8,889 | 2,308 1,162 | 1,136 142 | 4,645 2,235 | 11,042 3,721 | 8,276 517 | 2,132 3,045 |
| Nonmetallic minerals, except fuels, mining | 74,367 | 59,795 | 4,152 | 608 | 9,997 | 20,440 | 3,397 | 7,192 |
| New Jersey, total | 53,666 | ¹ 41 , 455 | 3,505 | 614 | 7,870 | 15,042 | 3,310 | 4,177 |
| Metal mining | 14,763 | ¹ 12,269 29,186 | 1,497 | 241 373 | 2,809 5,061 | 6,081 8,961 | 1,287 2,023 | 1,720 2,4 57 |
| | 38,903 | | 2,008 | | | | | |
| Pennsylvania, total | 1,050,329 | 631,961 | 93,985 | 8,506 | 152,692 | 342,448 | 44,329 | 58,7 8 5 |
| Metal mining | 18,009 408,720 | 9,744 197,535 | 1,347 33,058 | 213 2,856 | 2,549 48,282 | 5,795 114,042 | 1,238 | 1,6 50 10,716 |
| Bituminous coal and lignite mining | 454,217 | 301,345 63,603 | 46,311 | 3,823 753 | 74,423 14,171 | 175,765 24,462 | 21,548 2,985 | 23,180 16,712 |
| Crude petroleum and natural gas extraction Nonmetallic minerals, except fuels, mining | 89,877 79,506 | 59,734 | 7,034 6,235 | 861 | 13,267 | 22,384 | 4,764 | 6,527 |
| East North Central, total | 1,084,157 | 807,307 | 68,996 | 9,479 | 131,757 | 279,055 | 54,229 | 155.953 |
| Metal mining | 110,339 | 86,000 | 10,252 | 2,524 | 20,358 | 44,841 | 17,438 | 36,849 |
| Bituminous coal and lignite mining Crude petroleum and natural gas extraction. | 380,381 325,339 | 260,838 252,519 | 27,426 14,095 | 2,335 1,978 | 46,138 26,518 | 113,064 51,226 | 12,920 9,823 | 26,782 |
| Nonmetallic minerals, except fuels, mining | 268,098 | 207,950 | 17,223 | 2,642 | 38,743 | 69,924 | 14,048 | 65, 95 1 26.371 |
| Ohio, total | 227,822 | 166,936 | 17,578 | 2,074 | 33,472 | 67,794 | 10,691 | 25,074 |
| Bituminous coal and lignite mining | 131,139 | 91,435 | 10,079 | 822 | 18,021 | 41,407 | 4,527 | 8,244 |
| Crude petroleum and natural gas extraction Nonmetallic minerals, except fuels, mining | 22,880 73,803 | 16,899 58,602 | 2,509 4,990 | 405 847 | 4,264 11,187 | 6,553 19,834 | 1,635 4,529 | 8,701 8,129 |
| Indiana, total | 128,336 | 84,219 | 7,664 | 1,036 | 14,087 | 29,490 | 5,465 | 15,361 |
| | · | | | | | | | |
| Bituminous coal and lignite mining Crude petroleum and natural gas extraction | 69,323 29,307 | 39,662 22,277 | 4,154 1,152 | 456 234 | 6,766 1,903 | 17,668 3,355 | 2,455 1,324 | 6,805 5,117 |
| Nonmetallic minerals, except fuels, mining Illinois, total | 29,706 | 22,280 | 2,358 | 346 | 5,418 | 8,467 | 1,686 | 3,439 |
| Metal mining | 484,942 3,101 | 368,349 1,257 | 26,301 | 2,769 | 48,009 180 | 105 , 307 | 14,771 | 62,022 |
| Bituminous coal and lignite mining | 179,919 | 129,741 | 13,193 | 1,057 | 21,351 | 53,989 | 5,938 | 11,733 |
| Crude petroleum and natural gas extraction Nonmetallic minerals, except fuels, mining | 229,703 72,219 | 182,850 54,501 | 8,547 4,473 | 1,065 625 | 16,478 10,000 | 33,025 17,939 | 5,201 3,485 | 45,015 5,247 |
| Michigan, total | 193,456 | 148,659 | 13,957 | 3,111 | 28,823 | 62,168 | 20,564 | 45,919 |
| Metal mining Crude petroleum and natural gas extraction | 93,802 43,449 | 74,034 30,493 | 8,871 1,887 | 2,377 274 | 17,703 3,873 | 38,876 8,293 | 16,524 | 35,072 7,118 |
| Nonmetallic minerala, except fuels, mining | | 44,132 | 3,199 | 460 | 7,247 | 14,999 | 2,377 | 3,729 |

See footnotea at end of table.

| | | | Number of | employees | Man-hours | Wages and | salaries | |
|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------|---------------------------------------------|--------------------------------|----------------------------------------------|---------------------------------------------|------------------------------------|--------------------------------------|
| Industry group, geographic division, and State | Value of shipments | Value added in mining | Production and development workers | All other employees | worked by production and development workers | Production and development workers | All other employees | Capital expendi- tures |
| | (\$1,000) | (\$1,000) | | | (1,000) | (\$1,000) | (\$1,000) | (\$1,000) |
| East North CentralContinued Wisconsin, total | 49,601 | 39,144 | 3,496 | 489 | 7,366 | 14,296 | 2,738 | 7,577 |
| Metal mining Nonmetallic minerals, except fuels, mining | 13,436 36,165 | 10,709 28,435 | 1,293 2,203 | 125 364 | 2,475 4,891 | 5,611 8,685 | 767 1,971 | 1,750 5,827 |
| West North Central, total | ¹ 987,796 | ¹ 767,193 | 43,135 | 7,382 | 87,023 | 168,179 | 38,349 | 194,111 |
| Metal mining Bituminous coal and lignite mining Crude petroleum and natural gas extraction Nommetallic minerals, except fuels, mining | ¹ 383,375 30,310 4 5 2,369 121,742 | 1320,460 21,152 339,160 86,421 | 17,512 2,171 14,116 9,336 | 2,912 222 2,796 1,452 | 33,721 3,751 28,308 21,243 | 71,223 7,861 55,801 33,294 | 16,737 1,431 14,191 5,990 | 64,073 1,192 113,969 14,877 |
| Minnesota, total | 343,975 | 290,294 | 13,867 | 2,312 | 26,400 | 56,579 | 13,363 | 64,052 |
| Metal mining Nonmetallic minerals, except fuels, mining | 327,943 16,032 | 278,589 11,705 | 12,605 1,262 | 2,050 262 | 23,604 2,796 | 51,715 4,864 | 12,287 1,076 | 62,0 62 1,990 |
| Iowa, total | 31,569 | 21,517 | 2,347 | 295 | 5,288 | 7,894 | 1,181 | 3,906 |
| Nonmetallic minerals, except fuels, mining Bituminous coal and lignite mining and crude petroleum and natural gas | 26,417 | 18 ,07 9 | 1,743 | 249 | 4,199 | 6 ,1 49 | 990 | 3,267 |
| extraction | 5,152 | 3,438 | 604 | 46 | 1,089 | 1,745 | 191 | 639 |
| Missourí, total | 78,124 | 56,489 | 6,690 | 1,119 | 13,445 | 24,340 | 5,520 | 5 ,733 |
| Metal mining Bituminous coal and lignite mining | 32,852 12,165 | ¹ 24,095 7,634 | 2,963 785 | 605 6Q | 5,745 1,368 | 11,542 2,882 | 3,136 434 | 894 281 |
| Crude petroleum and natural gas extraction Nonmetallic minerals, except fuels, mining | 259 32,848 | 69 24,691 | 22 2,920 | 24 430 | 36 6,296 | 60 9,856 | 96 1, 854 | 399 4,159 |
| North Dakota, total | 28,851 | 6,911 | 1,460 | 421 | 3,101 | 6,633 | 2,400 | 22,180 |
| Crude petroleum and natural gas extraction Metal mining, bituminous coal and lignite mining, and nommetallic minerals, except | 19,503 | (4) | 884 | 363 | 2,045 | 4,401 | 2,028 | 21,740 |
| fuels, mining | 9,348 | 7,227 | 576 | 58 | 1,056 | 2,232 | 372 | 440 |
| South Dakota, total | ¹ 31,293 | ¹ 22,510 | 2,496 | 373 | 5,649 | 9,935 | 1,813 | 3,526 |
| Metal mining | 119,268 11,714 | ¹ 15,570 7, 999 | 1,594 864 | 225 100 | 3,544 2,016 | 6,622 3,134 | 1,160 391 | 1,029 1,745 |
| extraction | 311 | (4) | 38 | 48 | 89 | 179 | 262 | 752 |
| Nebraska, total | 35,024 | 27,124 | 1,372 | 184 | 3,175 | 5,575 | 809 | 13,826 |
| Crude petroleum and natural gas extraction Nonmetallic minerals, except fuels, mining | 24,477 10,547 | 19 ,97 9 7,145 | 483 889 | 80 104 | 984 2,191 | 2,247 3,328 | 416 393 | 12,2 73 1,5 53 |
| Kansas, total | 438,960 | 342,348 | 14,903 | 2,678 | 29,965 | 57,223 | 13,263 | 80,888 |
| Metal mining | 3,312 .6,679 407,354 21,615 | 2,206 4,271 320,707 15,164 | 349 423 12,661 1,470 | 32 74 2,278 294 | 828 721 25,084 3,332 | 1,343 1,770 48,771 5,339 | 154 535 11,356 1,218 | 88 314 78,599 1,8 87 |
| South Atlantic, total | 1,116,180 | ¹ 757,527 | 98,729 | 9,475 | 176,315 | 366,945 | 48,340 | 98,022 |
| Metal mining | 21,532 741,411 75,233 278,004 | 120,252 495,940 60,521 180,814 | 1,774 73,129 5,128 18,698 | 351 5,806 623 2.695 | 3,753 120,761 9,476 42,325 | 5,817 288,514 15,512 57,102 | 1,585 31,293 2,439 13,023 | 7,270 48,196 15,650 26,906 |
| Delaware ³ | 955 | 735 | 61 | 10 | 139 | 220 | 47 | 117 |
| Maryland and District of Columbia, total | 23,187 | 17,204 | 1,743 | 208 | 3,949 | 5,915 | 844 | 1 ,79 5 |
| Bituminous coal and lignite mining Normetallic minerals, except fuels, mining Metal mining and crude petroleum and | 2,119 20,509 | 1,631 15,022 | 352 1,340 | 19 180 | 562 3,308 | 1,003 4,762 | 70 764 | 145 1,25 5 |
| natural gas extraction | 559 | 551 | 51 | 9 | 79 | 150 | 10 | 395 |
| Virginia, total | 135,744 | 88,395 | 14,330 | 1,382 | 24,919 | 44,801 | 5,135 | 10,737 |
| Metal mining Bituminous coal and lignite mining Crude petroleum and natural gas extraction Nommetallic minerals, except fuels, mining | 5,764 97,777 609 31,594 | 5,006 61,136 174 22,079 | 10,730 46 2,711 | 111 662 5 604 | 1,564 17,324 110 5,921 | 2,238 34,763 148 7,652 | 482 2,139 29 2,485 | 2,029 5,207 525 2,976 |

See footnotes at end of table.

| Dolland Division IV | At ALL THICKE | i hibonitan, i | or oneone into | DE VIDION AND | DIRLE. 1994 | -Voti of Indeed | | |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------|---------------------------------------------|------------------------------|----------------------------------------------|---------------------------------------------|---------------------------------------|-------------------------------------|
| | | | Number of | employees | Man-hours | Wages and | salaries | |
| Industry group, geographic division, and State | Value of shipments | Value added in mining | Production and development workers | All other employees | worked by production and development workers | Production and development workers | All other employees | Capital expendi- tures |
| | (\$1,000) | (\$1,000) | WOLDER | | (1,000) | (\$1,000) | (\$1,000) | (\$1,900) |
| South Atlantic Continued West Virginia, total | 735,911 | 511,179 | 68,543 | 5,839 | 115,250 | 272,924 | 31,820 | 57,661 |
| Bituminous coal and lignite mining Crude petroleum and natural gas extraction Metal mining and nommetallic minerals, | 641,472 72,290 | 433,140 61,184 | 62,039 4,910 | 5,125 443 | 102,860 8,996 | 252,729 14,636 | 29,084 1,408 | 42,844 13,132 |
| except fuels, mining | 22,149 | 16,855 | 1,594 | 271 | 3,394 | 5,559 | 1,328 | 1,685 |
| North Carolina, total | 39 , 566 | 30,596 | 3,323 | 236 | 7,420 | 9,193 | 1,173 | 3,331 |
| Metal mining Nonmetallic minerals, except fuels, mining | 9,606 29,960 | 8,833 21,763 | 507 2,816 | 18 218 | 1,199 6,221 | 2,105 7,088 | 130 1,043 | 477 2,654 |
| South Carolina ² | 12,852 | 10,097 | 1,276 | 125 | 2,909 | 3,330 | 591 | 1,947 |
| Georgia, total | 43,255 | 32,849 | 3,913 | 423 | 8,755 | 10,898 | 2,302 | 6,800 |
| Metal mining Nonmetallic minerals, except fuels, mining Bituminous coal and lignite mining and crude petroleum and natural gas | 1,647 41,565 | 1,028 31,866 | 132 3,772 | 17 406 | 278 8 , 460 | 321 10 , 555 | 50 2,252 | 332 6,198 |
| extraction | 43 | (4) | 9 | | 17 | 22 | ••• | 270 |
| Florida, total | 124,710 | ¹ 66,472 | 5,540 | 1,252 | 12,974 | 19,664 | 6,428 | 15,634 |
| Nonmetallic minerals, except fuels, mining Metal mining and crude petroleum and | 118,899 | 62,745 | 5,169 | 887 | 12,079 | 18,125 | 4,568 | 10.628 |
| natural gas extraction | 5,811 | ¹ 3,727 | 371 | 365 | 895 | 1,539 | 1,860 | 5,006 |
| East South Central, total | 698,836 | ¹ 516,877 | 60,610 | 6,047 | 104,291 | 205,183 | 29,136 | 67,693 |
| Metal mining Bituminous coal and lignite mining Crude petroleum and natural gas extraction Normetallic minerals, except fuels, mining | 52,454 364,389 184,754 97,239 | ¹ 30,918 268,774 146,517 70,668 | 4,194 41,306 6,662 8,448 | 503 2,928 1,660 956 | 7,671 66,137 12,451 18,032 | 15,402 142,877 22,264 24,640 | 3, 196 16, 220 5, 215 4, 505 | 5,022 16,915 39,086 6,670 |
| Kentucky, total | 363,430 | 273,620 | 35 ,7 70 | 2,718 | 59,697 | 122,421 | 13,162 | 30,144 |
| Bituminous coal and lignite mining Crude petroleum and natural gas extraction | 268,874 70,399 | 197,373 58,294 | 29,474 4,021 | 1,998 372 | 47,438 7,303 | 104,079 11,620 | 10,129 1,355 | 11,626 16,424 |
| Metal mining and nonmetallic minerals, except fuels, mining | 24,157 | 17,953 | 2,275 | 348 | 4,956 | 6,722 | 1,678 | 2,094 |
| Tennessee, total | 82,820 | 61,108 | 8,862 | 717 | 16,325 | 26,368 | 3,670 | 7,056 |
| Metal mining Bituminous coal and lignite mining Crude petroleum and natural gas extraction Normetallic minerals, except fuels, mining | 5,874 26,574 129 50,243 | 3,630 20,910 24 36,544 | 784 3,994 21 4,063 | 134 153 1 429 | 1,385 6,362 38 8,540 | 2,389 12,244 33 11,702 | 701 7771 5 2,193 | 2,726 1,217 5 3,108 |
| Alabama, total | 133,663 | ¹ 89,073 | 12,900 | 1,281 | 22,032 | 44,883 | 8,435 | 7,483 |
| Metal mining | 46,580 68,941 4,838 13,304 | ¹ 27,288 50,491 1,875 9,419 | 3,409 7,838 236 1,417 | 369 7777 30 105 | 6,285 12,337 462 2,948 | 13,010 26,554 1,090 4,229 | 2,495 5, 320 171 449 | 2,296 4,072 510 605 |
| Mississippi, total | 118,923 | 93,076 | 3,078 | 1,331 | 6,237 | 11,511 | 3,869 | 23,010 |
| Crude petroleum and natural gas extraction | 109,388 | 86,324 | 2,384 | 1,257 | 4,648 | 9,521 | 3,684 | 22,147 |
| Nonmetallic minerals, except fuels, mining West South Central, total | 9,535 16,332,803 | 6,752 | 694 | 74 | 1,589 | 1,990 | 185 | 263 1,498,156 |
| | ¹ 39,832 | ¹ 25,111 | | 251 | 4,788 | 8,330 | 1,348 | |
| Metal mining Bituminous coal and lignite mining Crude petroleum and natural gas extraction Normetallic minerals, except fuels, mining | 19,639 6,023,048 250,284 | 15,275 4,917,380 200,082 | 2,177 .1,663 148,350 10,959 | 105 40,246 1,630 | 2,870 324,604 25,089 | 6,433 630,243 39,800 | 476 248,066 8,669 | 1,187 811 1,478,921 17,237 |
| Arkansas, total | ¹ 134,826 | ¹ 106,514 | 4,902 | 789 | 9,816 | 17,220 | 4,181 | 13,533 |
| Crude petroleum and natural gas extraction Nonmetallic minerals, except fuels, mining Metal mining and bituminous coal and | 85,246 27,768 | 69,130 20,290 | 2,145 1,485 | 429 137 | 4,144 3,321 | 7,677 4,854 | 2,383 643 | 11,237 1,509 |
| lignite mining | ¹ 21,812 | ¹ 17,094 | 1,272 | 223 | 2,351 | 4,689 | 1,155 | 787 |
| Louisiana, total | 1,193,052 | 978,517 | 29,700 | 6,075 | 66,574 60,016 | 133,840 123,100 | 37,019 | 429,981 |
| Crude petroleum and natural gas extraction Nonmetallic minerals, except fuels, mining | 1,117,901 75,151 | 916,831 61,686 | 26,764 2,936 | 5,434 | 6,558 | 10,740 | 33,673 3,3 46 | 425,212 4,769 |
| Oklahoma, total | 737,059 | ¹ 572,431 | 29,769 | 6,262 | 60,222 | 114,132 | 36,501 | 218,278 |
| Crude petroleum and natural gas extraction Nonmetallic minerals, except fuels, mining Metal mining and bituminous coal and | 697,304 12,103 | 548,379 9,431 | 26,639 1,006 | 6,068 | 53,425 2,433 | 102,588 3,375 | 35,638 473 | 2 16,377 1,469 |
| lignite mining | 27,652 | 114,621 | 2,124 | 84 | 4,364 | 8,169 | 390 | 432 |

See footnotes at end of table.

| | | | Number of | employees | Man-hours worked by | Wages and | salaries | |
|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------|---------------------------------------------|--------------------------------|---------------------------------------------|---------------------------------------------|------------------------------------|--------------------------------------|
| Industry group, geographic division, and State | Value of shipments | Value added in mining | Production and development workers | All other employees | production and development workers | Production and development workers | All other employees | Capital expendi- tures |
| | (\$1,000) | (\$1,000) | | | (1,000) | (\$1,000) | (\$1,000) | (\$1,000) |
| West South CentralContinued Texas, total | 4,267,866 | 3,500,386 | 98,778 | 29,106 | 220,739 | 419,614 | 180,858 | 836,364 |
| Crude petroleum and natural gas extraction Nommetallic minerals, except fuels, mining Metal mining and bituminous coal and lignite mining | 4,122,597 135,262 10,007 | 3,383,040 108,675 8,671 | 92,802 5,532 444 | 28,315 742 49 | 207,019 12,777 943 | 396,878 20,831 1,905 | 176,372 4,207 279 | 826,095 9,490 779 |
| | ¹ 1,759,415 | | | | | | | |
| Mountain, total | | ¹ 1,295,364 | 68,415 | 14,458 | 139,715 | 301,788 | 83,912 | 357,775 |
| Metal mining. Bituminous coal and lignite mining Crude petroleum and natural gas extraction Nonmetallic minerals, except fuels, mining | 1762,604 67,646 773,297 155,868 | 1501,328 51,540 622,662 119,834 | 37,237 6,873 16,612 7,693 | 7,417 699 4,872 1,470 | 79,826 10,039 34,216 15,634 | 169,375 25,878 71,893 34,642 | 41,393 4,395 28,971 9,153 | 91,643 3,167 248,285 14,680 |
| Montana, total | ¹ 143,698 | ¹ 80,340 | 8,602 | 2,127 | 16,738 | 35,457 | 11,528 | 31,209 |
| Metal mining | ¹ 86,252 5,250 41,894 10,302 | ¹ 38,504 3,822 30,336 7,678 | 5,898 356 1,592 756 | 1,235 60 712 120 | 11,270 523 3,476 1,469 | 24,023 1,203 6,944 3,287 | 6,755 280 3,880 613 | 4,478 854 24,112 1.765 |
| Idaho, total | ¹ 51,889 | ¹ 38,569 | 4,121 | 645 | 8,622 | 18,611 | 3,745 | 5,831 |
| Metal mining Crude petroleum and natural gas extraction | ¹ 42,936 | ¹ 32,491 | 3,607 | 583 | 7,556 | 16,407 | 3,424 | 3,730 |
| and nonmetallic minerals, except fuels, mining | 8,953 | 6,078 | 514 | 62 | 1,066 | 2,204 | 321 | 2,101 |
| Wyoming, total | ¹ 308,437 | ¹ 254,371 | 7,379 | 1,738 | 14,429 | 32,110 | 10,066 | 68,011 |
| Crude petroleum and natural gas extraction Nonmetallic minerals, except fuels, mining Metal mining and bituminous coal and | 267,318 25,420 | 222,542 19,585 | 5,131 847 | 1,440 | 10,571 1,734 | 23,535 3,538 | 8,545 951 | 66,904 789 |
| lignite mining | ¹ 15,699 | ¹ 12,244 | 1,401 | 118 | 2,124 | 5,037 | 570 | 318 |
| Colorado, total | 1260,661 | ¹ 204,697 | 11,109 | 2,209 | 21,466 | 45,088 | 12,442 | 55,922 |
| Bituminous coal and lignite mining Crude petroleum and natural gas extraction Metal mining and nonmetallic minerals, | 15,984 160,054 | 13,484 125,614 | 2,431 3,439 | 187 1,100 | 3,229 6,646 | 7,928 13,943 | 1,007 6,474 | 543 45,167 |
| except fuels, mining | ¹ 84,623 | ¹ 65,599 | 5,239 | 922 | 11,591 | 23,217 | 4,961 | 10,212 |
| New Mexico, total | ¹ 397,219 | ¹ 332,772 | 11,347 | 2,356 | 23,131 | 49,415 | 15,376 | 119,557 |
| Bituminous coal and lignite mining Crude petroleum and natural gas extraction Metal mining and nonmetallic minerals, | 732 289,717 | 614 242,379 | 147 5,527 | 1,235 | 225 11,436 | 363 23,112 | -8,089 | 26 103,942 |
| except fuels, mining | ¹ 106,770 | ¹ 89,779 | 5,673 | 1,109 | 11,470 | 25,940 | 7,259 | 15,589 |
| Arizona, total | ¹ 217,539 | ¹ 176,998 | 10,840 | 2,216 | 24,848 | 53,671 | 12,694 | 47,316 |
| Metal mining. Bituminous coal and lignite mining, crude petroleum and natural gas extraction, and | ¹ 212,448 | ¹ 173,034 | 10,355 | 2,165 | 23,854 | 52,108 | 12,459 | 46,139 |
| nonmetallic minerals, except fuels, mining | 5,091 | 3,964 | 485 | 51 | 994 | 1,563 | 235 | 1,177 |
| Utah, total | ¹ 277,501 | ¹ 154 , 187 | 10,368 | 2,460 | 20,249 | 46,107 | 14,183 | 19,667 |
| Bituminous coal and lignite mining Metal mining, crude petroleum and natural gas extraction, and nonmetallic minerals, | 32,924 | 24,022 | 2,735 | 351 | 4,351 | 12,214 | 2,668 | 1,689 |
| except fuels, mining | 1244,577 | ¹ 130,165 | 7,633 | 2,109 | 15,898 | 33,893 | 11,515 | 17,978 |
| Nevada, total | ¹ 102,471 | ¹ 53,430 | 4,649 | 707 | 10,232 | 21,329 | 3,878 | 10,262 |
| Metal mining Crude petroleum and natural gas extraction and nonmetallic minerals, except fuels, | ¹ 90 , 879 | 149,003 | 4,007 | 592 | 8,807 | 18,408 | 3,174 | 8.378 |
| mining | 11,592 | 4,427 | 642 | 115 | 1,425 | 2,921 | 704 | 1,884 |
| Pacific, total | ¹ 1,548,185 | ¹ 1,350,810 | 33,365 | 8,700 | 66,808 | 156,831 | 53,998 | 229,606 |
| Metal mining Bituminous coal and lignite mining Crude petroleum and natural gas extraction Normetallic minerals, except fuels, mining | 157,225 4,597 1,307,736 178,627 | 139,001 3,731 1,171,369 136,709 | 3,204 669 20,457 9,035 | 591 41 5,701 2,367 | 7,305 1,004 40,270 18,229 | 13,809 2,647 99,671 40,704 | 2,670 171 38,277 12,880 | 8,805 44 200,816 19,941 |

| | | | Number of | employees | Man-hours worked by | Wages and | alariea | |
|------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------|---------------------------------------------|---------------------|---------------------------------------------|---------------------------------------------|---------------------|------------------------------|
| Industry group, geographic division, and State | Value of shipments | Value added in mining | Production and development workers | All other employees | production and development Workers | Production and development workers | All other employees | Capital expendi- tures |
| | (\$1,000) | (\$1,000) | | | (1,000) | (\$1,000) | (\$1,000) | (\$1,000) |
| PacificContinued Washington, total | 31,399 | ¹ 22,675 | 2,515 | 548 | 4,656 | 10,486 | 3,005 | 2,857 |
| Metal mining Nonmetallic minerals, except fuels, mining Bituminous coal and lignite mining, and | 8,845 17,923 | | | 140 294 | 1,415 2,211 | | 665 1,741 | 714 2,056 |
| crude petroleum and natural gas extraction | 4,631 | 3,592 | 681 | 114 | 1,030 | 2,704 | 599 | 87 |
| Oregon, total | 17,364 | 12,312 | 1,241 | 136 | 2,509 | 5,329 | 733 | 3,685 |
| Nonmetallic minerals, except fuels, mining Metal mining, bituminous coal and lignite mining, and crude petroleum and natural | 15,683 | 11,583 | 1,090 | 116 | 2,226 | 4,828 | 613 | 2,109 |
| gas extraction | 1,681 | 729 | 151 | 20 | 283 | 501 | 120 | 1.576 |
| California, total | ¹ 1,499,422 | ¹1,315,823 | 29,609 | 8,016 | 59,643 | 141,016 | 50,260 | 223,064 |
| Crude petroleum and natural gas extraction Normetallic minerals, except fuels, mining Metal mining and bituminous coal and | 1,307,688 145,021 | 1,171,802 112,128 | | | | 99,611 30,664 | | 200,724 15,776 |
| lignite mining | ¹ 46,713 | ¹31,893 | 2,407 | 434 | 5,609 | 10,741 | 1,903 | 6.564 |

Excludes figures for the uranium-radium-vanadium ores industry. Data were not obtained in the 1954 minerals census on the value of shipments and the cost of ores received for milling for establishments in this industry. The total number of employees for this industry in 1954 was 3,468, total wages and salaries amounted to \$14,575,000, and capital expenditures were \$14,756,000. For Colorado such figures were 1,631, \$7,114,000, and \$3,154,000, respectively; for New Mexico, 421, \$1,860,000, and \$3,235,000; for Arizona, 340, \$1,160,000, and \$736,000; and for Utah, 883, \$3,706,000, and \$6,897,000.

*Represents "metal mining" and "nonmetallic minerals, except fuels, mining" only.

*The computed "value added in mining" for this industry group is negative, reflecting primarily drilling for oil and gas which resulted in dry holea. According to industry custom, the drilling costs for such holes were not capitalized.





DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS WASHINGTON 25, D. C.

OFFICIAL BUSINESS

Postage and Fees Paid
U. S. Department of Commerce

1954 Census of Mineral Industries

December 1956 Series: MI-14-3-1

SUMMARY STATISTICS: INDUSTRY GROUPS AND INDUSTRIES

The value of shipments of all mineral industries in 1954 amounted to \$15 billion, including \$9.2 billion for crude petroleum and natural gas extraction, \$2.5 billion for coal mining, \$1.6 billion for other nonmetallic minerals mining, and \$1.5 billion for metal mining. The total payroll for all mineral industries amounted to \$3.2 billion, including \$1.3 billion for oil and gas, \$1.0 billion for coal, and \$0.4 billion each for other nonmetallic minerals and for metal ores. Capital expenditures amounted to \$2.7 billion, of which more than four-fifths was for development and maintenance of oil- and gas-field properties. Employment in the mineral industries was 754 thousand in 1954 and total horsepower of equipment available for use was 41 million.

The 1954 value of shipments of all mineral industries represented over a fourfold increase since 1939, the year covered by the preceding Census of Mineral Industries, and horsepower available for use in these industries tripled between the two years. However, employment declined by 10 percent, between 1939 and 1954. An employment decline of 59 percent was shown for anthracite mining, 45 percent for bituminous coal and lignite mining, and 2 percent for metal mining. There was an employment increase of 57 percent for crude petroleum and natural gas extraction, and an increase of 50 percent for other nonmetallic minerals. It should be noted, however, that both coal and iron ore production was particularly low in 1954. Bureau of Mines figures show declines from 1939 to 1954 of 14 percent for bituminous coal and lignite and 34 percent for iron ore.

Industry Classification.—The mining industries, as defined in the Standard Industrial Classification, represent establishments primarily engaged in the extraction of minerals occurring naturally. They include exploration and development of mineral properties and contract service establishments primarily engaged in work on mineral properties. In general, crushing, screening, washing, concentration, and other preparation operations needed to render the material marketable are included, whether or not the preparation plants are located at the mines served. Such activities as smelting of metallic ores, petroleum refining, and production of cement and clay products are excluded and classified in the manufacturing industries.

Mining operations which are carried on as secondary activities at manufacturing or other nonmining establishments such as stone quarries at cement, lime, and dimension stone dressing plants, and clay pits at structural clay products and pottery plants and gypsum mines at gypsum products plants are not within the scope of the minerals census. The approximate value of such excluded mineral production in 1954 was \$320 million, all of which represents mineral products for which the primary production is classified in Major Group 14—Nonmetallic Minerals, except Fuels, Mining.

In the minerals census, reports were obtained for the operations of an entire establishment, showing the output of mineral products; operating and development costs; and labor, mechanical equipment, and materials requirements. A mineral establishment is generally defined as a single physical location where mineral operations are conducted as a unit or are unified by common management or joint handling of some part of the mining or preparation process. For oil- and gasfield operations only one report was required for all oil- and gas-field operations of a reporting company in each State. For mineral contract service operations, only one report was required for all such operations in the United States.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

Mining operations were classified by industry on the basis of the value of the principal mineral produced or, if there was no production, on the basis of the principal mineral for which exploration or development work was in process. For most mineral industries, secondary products are of little statistical importance. The most significant exceptions are for establishments producing complex ores containing copper, lead, zinc, gold, and silver, and for wells which produce both oil and gas. Three-quarters of all natural gas was produced in 1954 at establishments primarily engaged in producing crude petroleum.

Number of Employees.—The figures for number of employees represent an average of 12 monthly figures for the payroll ending nearest the 15th of each month, or for 1954 for Major Group 13, Crude Petroleum and Natural Gas Extraction, an average of 4 quarterly figures for the payroll ending nearest the 15th of March, May, August, and November.

Figures are shown for "all employees" and also separate figures for "production and development workers." These figures exclude data for proprietors and firm members of unincorporated concerns, whether or not they performed manual labor.

The figures for employment in individual mineral commodity industries do not include employees of contractors which performed services such as strip mining and oil well drilling. Separate figures are shown for such contractors under the mineral contract services industries.

The figures for "production and development workers" represent employees up through the working foreman level engaged in manual work, using tools, operating machines, hauling materials, loading and hauling products out of the mine in mine cars or trucks, and caring for mines, plants, mills, shops, or yards. The figures include miners paid on a per ton, car, or yard basis and the men engaged by them and paid out of the total amount received by these miners.

Payroll.—The figures for total payroll represent the gross earnings paid in the calendar year to all employees on the payroll of mining establishments. They include all forms of compensation such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind; prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. For each industry the data for payroll represent the compensation of the types of employees described above and for which figures are shown under "number of employees." The figures for "wages" represent compensation of the types of employees described above as "production and development workers."

Man-Hours of Production and Development Workers.—The man-hour figures represent all hours actually worked by production and development employees both on days when the mines were active for production or development work and on inactive days when only watchmen, repairmen, and other maintenance men were on duty. They exclude hours for paid vacations, holidays, or sick leave when the employee was not actually at the mine. Included are actual overtime hours, not straight time equivalent hours. Man-hours of working proprietors, however, are excluded.

<u>Value of Shipments.</u>—The value of shipments figures represent the value of all products physically shipped from the establishment during the year, including material withdrawn from stockpiles, and products shipped on consignment whether or not sold in the year. For each industry, they represent the value of all "primary" products of the industry, the value of "secondary" products which are primary to other industries, the receipts for contract work done for others (except custom milling), and the value of products purchased and resold without further processing.

The value of shipments figures for 1954, and some of the figures for 1939, represent "gross" shipments and contain duplication due to the inclusion of the value of materials transferred from one establishment to another for mineral preparation as well as the value of the prepared material produced therefrom either for the account of the reporting company or on a custom or toll basis for others. For all mineral industries, this duplication in 1954 amounted to less than 4 percent; however, it was more significant in metal mining and coal mining, amounting to about 11 percent for all metal mining and to 20 percent for the lead and zinc ores industries; for anthracite mining amounting to 29 percent, and for bituminous coal and lignite mining to 13 percent. Footnotes in the table indicate where this duplication is most significant, and the approximate magnitude of such duplication. For 1939, in general, the figures shown represent value of production.

Value Added in Mining.—For 1954, this measure is computed by subtracting the cost of supplies, minerals received for preparation, fuel, electric energy, contract work, and purchased machinery from the value of shipments and capital expenditures. Such a measure avoids the duplication in value of shipments which results from the use of products of some establishments as supplies, energy sources, or materials by others. Moreover, it provides a measure not only of value added in mineral production but also in the development in mineral properties. For 1939, comparable data are not available for capital expenditures or for cost of purchased machinery and equipment. However, a rough measure of value added in mining is computed for 1939 by subtracting from the value of shipments, the cost of supplies, minerals received for preparation, fuels, purchased electric energy, and contract work.

<u>Capital Expenditures.</u>—These figures represent capitalized expenditures made during 1954 for development and exploration of mineral properties, for new construction, and for new and used machinery that were chargeable to fixed assets accounts of the mining establishments and were of a type for which depreciation, depletion, or Defense Minerals Exploration Administration accounts are ordinarily maintained. For each industry, the capital expenditures include work done on contract as well as by the mine forces.

Aggregate Horsepower.—The "aggregate horsepower" represents the sum of the horsepower of all prime movers and the horsepower of electric motors driven by purchased energy. The figures shown include the horsepower of loading equipment, transportation equipment, and all other mine and preparation plant equipment at mineral establishments. The figures include the horsepower of highway-type equipment used in loading mineral products at the mine or preparation plant site.

General.—These statistics are derived from preliminary and, in part, from final tabulations of reports received in the 1954 Census of Mineral Industries. Final summary figures will appear in the Census bulletin, "General Summary," which will be published and offered for sale by the Superintendent of Documents within the next six months. More detailed figures for the individual industries have been published in the preliminary releases for specific industries or groups of industries. Additional detail, including State and sometimes county figures, statistics by type of operation such as method of mining or method of mineral preparation, and data on size of establishment, are included in the final industry bulletins which are now being issued. Separate preliminary and final reports will show summary statistics for all mineral industries within each State.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census in cooperation with the Bureau of Mines (U. S. Department of Interior) to minimize duplication in canvassing mineral establishments. The two agencies cooperated for industries for which the Bureau of Mines had been conducting annual commodity surveys and the Census report form used for such industries also provided the information required by the Bureau of Mines for its annual statistics on these commodities. The Bureau of Mines acted as collection agent for about one-third of the establishment reports for the 1954 minerals census; this collection covered most of the establishments in the metal mining and coal mining industries and about one-half of the establishments in the nonmetallic minerals, except fuels, mining industry. The Bureau of the Census collected all reports for multi-establishment companies and all reports for the crude petroleum and natural gas, stone, clay, and certain other nonmetallic minerals industries.

| | | (EXCLUDES ESTABLISHMENTS FOR | | | ployees | |
|-----------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------|-------------------------------------------------------|----------------------------------------------------|
| Line | Ind. | | Marie | nber | Раут | oll |
| no. | code | | | | | 000) |
| | ļ | | 1954 | 1939 | 1954 | 1939 |
| 1 | | All industries, total | 754,238 | ¹ 841,044 | 3,196,528 | ¹ 1,158,079 |
| 2 3 4 5 6 | 10 11 12 13 14 | Metal mining Anthracite mining. Bituminous coal and lignite mining. Crude petroleum and natural gas extraction. Nonmetallic minerals, except fuels, mining. | 97,858 35,914 215,507 292,387 112,572 | 100,135 88,592 390,778 186,150 75,055 | 447,825 127,836 851,493 1,325,277 444,097 | 153,917 120,050 476,676 318,382 87,963 |
| 7 | 10 | Metal mining, total | 97,858 | 4100,135 | 447,825 | 4153,917 |
| 8 | 1011 | Iron ores | 32,174 | 22,651 | 144,035 | 33,326 |
| 9 | 1021 | Copper ores | 27,813 | 26,752 | 136,065 | 42,564 |
| 10 | 103 | Lead and zinc ores | 16,566 | 17,725 | 71,363 | 25,337 |
| 11 12 13 | 1032 1033 1034 | Lead ores. Zinc ores. Lead-zinc ores. | 578 1,922 14,066 | 17,725 | 2,215 8,283 60,865 | 25,337 |
| 14 | 104 | Cold and silver ores | 4,831 | 27,586 | 20,618 | 45,088 |
| 15 | 1042 | Lode gold. | 3,020 | 19,254 | 12,269 | 31,375 |
| 16 17 | 1043 | Placer gold | 556 1,255 | 3,705 4,627 | 2,311 6,038 | 6,794 6,919 |
| 18 | 1051 | Bauxite | 852 | 827 | 3,581 | 819 |
| 19 | 106 | Ferro-alloy ores, except vanadium | 7,807 | 2,493 | 36,807 | 3,996 |
| 20 | 1062 | Manganese ores | 2,532 | 545 | 9,046 | 567 |
| 21 22 | 1064 1063 1069 | Tungsten ores | 2,987 2,288 | 844 51,104 | 14,758 13,003 | 1,368 ⁵ 2,061 |
| 23 | 1081 | Metal mining contract services | 2,943 | 695 | 14,713 | 985 |
| 24 | 109 | Miscellaneous metal ores | 4,872 | 1,339 | 20,643 | 1,708 |
| 25 26 27 28 | 1092 1093 1094 1099 | Mercury ores. Titanium ores. Uranium-radium-vanadium ores. Metallic minerals, n.e.c. | 443 843 3,468 118 | 702 196 441 (⁵) | 1,922 3,699 14, <i>5</i> 75 447 | 917 182 609 (⁵) |
| 2 9 | 11 | Anthracite mining, total | 35,914 | 88,592 | 127,836 | 120,050 |
| 30 31 32 | 1111 1112 1113 | Anthracite. Anthracite stripping contract services. Anthracite contract services, except strip mining. | 31,212 4,565 137 | 85,713 2,646 233 | 109,881 17,476 479 | 115,860 3,915 275 |
| 33 | 12 | Bituminous coal and lignite mining, total | 215,507 | 390,778 | 851,493 | 476,676 |
| 34 35 | 1211 1212 | Bituminous coal. Lignite | 213,497 574 | 388,955 1,595 | 842,857 2,588 | 474,747 1,603 |
| 36 | 1213 | Bituminous coal and lignite mining contract services | 1,436 | 228 | 6,048 | 326 |
| 37 | 13 | Crude petroleum and natural gas extraction | 292,387 | 186,150 | 1,325,277 | 318,382 |
| 38 39 | 131 | Crude petroleum, natural gas, and natural gas liquids | 167,934 140,120 | 146,388 | 783,843 [658,431 | 253,163 |
| 40 41 | 1313 1314 | Natural gas. Natural gasoline Cycle condensate. | 10,474 15,045 2,295 | 136,051 | 40,355 73,359 11,698 | 234,899 |
| 42 43 | 1315 | Oil- and gas-field contract services | 124,453 | 39,762 | 541,434 | 65,219 |
| 44 45 | 1331 1332 | Drilling oil and gas wells Building, repairing, and dismantling rigs and derricks | 68,084 1,596 | 24,224 3,736 | 311,840 5,125 | 41,937 4,293 |
| 46 | 1339 | Oil- and gas-field contract services, n.e.c. | 54,773 | 11,802 975,055 | 224,469 444,097 | 18,989 987,963 |
| 47 48 | 14 141 | Nonmetallic minerals, except fuels, mining Dimension stone 10 | 112,572 3,224 | ⁹ 75,055 2,890 | 8,625 | 3,007 |
| 49 | 1412 | Dimension limestone 10 | 500 | 672 | 1,556 | 721 |
| 50 51 52 | 1413 1415 1417 | Dimension limestone ¹⁰ . Dimension granite ¹⁰ . Dimension marble ¹⁰ Dimension sandstone ¹⁰ | 967 637 973 | 1,238 669 287 | 2,639 1,640 2,456 | 1,479 497 297 |
| 53 | 1416 | Dimension traprock and stone, n.e.c. 10 | 147 | 24 | 334 | 13 |
| 54 | 142 | Crushed and broken stone 11 | 37,195 | 26,575 | 143,602 | 29,213 |
| 55 56 57 | 1422 1423 1424 | Crushed and broken limestone ¹¹ | 28,123 2,529 533 | 19,381 2,332 450 | 106,914 8,705 2,369 | 20,914 2,355 519 |
| 58 59 60 | 1425 1426 1427 | Crushed and broken marble. Crushed and broken trap rock 1. Crushed and broken sandstone. Crushed and broken stone, n.e.c. 11. | 431 2,986 1,711 | 79 2,164 1,232 | 1,369 13,689 7,054 | 74 3,103 1,258 |
| 61 | 1429 | Crushed and broken stone, n.e.c. 11 | 882 | 937 | 3,502 | 990 |
| 62 | 1441 | Sand and gravel ¹² | 36,406 | 19,777 | 146,820 | 25,215 |

than \$500; for 1939, less than \$2,500. For explanation of column captions, see text)

| | tnan \$500; | | tion and de | | | OI COLUMN | captions, see | text) | 12-2 | Lue added Capital | | 1 | | |
|---|-----------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------|-------------------------------------------------|-------------------------------------------|----------------------------------|
| | Num | ber | | hours | Wag (\$1. | es 000) | Value of sh (\$1, | nipments ,000) | in mi (\$1, | ning | expendi- tures, | hora | regate sepower | Line no. |
| | 1954 | 1939 | 1954 | 1939 | 1954 | 1939 | 1954 | 1939 | 1954 | 1939 | 1954 (\$1,000) | 1954 | 1939 | |
| ľ | 644,965 | 759,452 | 1,248,287 | 1,257,713 | 2,567,884 | 955,207 | ² 14,800,810 | 3,407,239 | ² 11,455,056 | 2,675,536 | 2,680,871 | 40,863 | 13,885 | 1 |
| | 81,702 33,058 199,548 233,616 97,041 | 89,791 83,112 370,944 148,996 66,609 | 167,912 48,282 325,123 492,249 214,721 | 190,834 124,462 545,702 265,028 131,687 | 352,537 114,042 763,039 974,793 363,473 | 127,111 107,798 432,188 220,435 67,675 | ² ³ 1,505,008 408,720 2,062,590 9,242,926 1,581,566 | 539,784 201,126 731,427 1,659,831 275,071 | ² 1,074,725 197,535 1,418,595 7,582,620 1,181,581 | 417,024 189,024 610,674 1,242,473 216,341 | 220,437 10,716 120,287 2,182,435 146,996 | 5,131 1,469 6,567 20,068 7,628 | 2,263 1,092 3,373 5,101 2,056 | 2 3 4 5 6 |
| | 81,702 | 489,791 | 167,912 | 4190,834 38,513 | 352,537 | 4127,111 | ² ³ 1,505,008 548,451 | 539,784 150,872 | ² 1,074,725 | 417,0 2 4 133,391 | 220,437 | 5,131 | ⁴ 2,263 | 7 |
| | 28,207 | 20,377 | 53,286 46,676 | 51,241 | 119,661 98,491 | 27,431 34,486 | ³ 508,729 | ³ 145,590 | 436,859 334,876 | 108,495 | 84,952 82,210 | 1,810 1,546 | 753 | 9 |
| | 13,592 | 15,731 | 27,554 | 32,481 | 53,676 | 20,253 | ³ 175,947 | 372,648 | 107,409 | 47,310 | 11,520 | 750 | 353 | 10 |
| | 475 1,308 11,809 | 15,731 | 903 2,383 24,268 | 32,481 | 1,726 4,406 47,544 | 20,253 | 4,581 11,661 159,705 | 72,648 | 3,415 7,733 96,261 | 47,310 | 575 2,339 8,606 | 29 65 656 | 353 | 11 12 13 |
| | 4,200 | 25,075 | 9,363 | 58,665 | 17,406 | 38,953 | 46,581 | 142,261 | 35,354 | 104,798 | 3,747 | 212 | 445 | 14 |
| | 2,634 501 1,065 | 17,591 3,228 4,256 | 5,894 1,255 2,214 | 41,522 8,088 9,055 | 10,406 1,997 5,003 | 27,304 5,632 6,017 | 28,517 5,916 12,148 | 92,942 28,027 21,292 | 21,884 3,614 9,856 | 66,523 21,935 16,340 | 2,177 504 1,066 | 112 64 36 | 291 110 44 | 15 16 17 |
| | 661 | 727 | 1,288 | 1,176 | 2,529 | 578 | 16,819 | 2,527 | 12,827 | 1,965 | 310 | 49 | 13 | 18 |
| | 6,742 2,209 | 2,168 504 | 14,933 4,178 | 4,686 959 | 30,993 7,461 | 3,096 483 | 152,277 332,123 | 19,757 | 106,086 17,982 | 16,405 706 | 14,993 3,195 | 371 107 | 56 5 | 19 20 |
| | 2,635 | 701 | 6,327 | 1,639 | 13,148 | 1,114 | 360,737 | 3,354 | 40,746 | 2,427 | 6,326 | 157 | 15 | 21 |
| ĺ | 1,898 | ⁵ 963 | 4,428 | 52,088 | 10,384 | ⁵ 1,499 | 59,417 | ⁵ 15,458 | 47,358 | 513,272 | 5,472 | 107 | ⁵ 36 | 22 |
| | 2,773 | 637 | 6,309 | 1,344 | 13,524 | 853 | 37,627 | 2,368 | 26,047 | 1,822 | 2,359 | 149 | 23 | 23 |
| | 3,983 | 1,182 | 8,503 | 2,622 | 16,257 | 1,390 | (NA) | 3,761 | (NA) | 2,838 | 20,346 | 244 | 19 | 24 |
| | 372 568 2,945 98 | 621 183 378 (⁵) | 841 1,261 6,194 207 | 1,421 322 879 (⁵) | 1,607 2,397 11,915 338 | 753 140 497 (⁵) | 4,519 12,750 (NA) 1,308 | 1,830 458 1,473 (⁵) | 3,355 11,134 (NA) 778 | 1,424 370 1,044 (⁵) | 3,998 14,756 1,077 | 12 46 167 19 | 10 2 7 (⁵) | 25 26 27 28 |
| | 33,058 | 83,112 | 48,282 | 124,462 | 114,042 | 107,798 | 6408,720 | ⁶ 201,126 | 197,535 | 189,024 | 10,716 | 1,469 | 1,092 | 29 |
| | 28,823 4,106 129 | 80,429 2,461 222 | 42,061 6,054 167 | 120,085 4,038 339 | 98,677 14,920 445 | 104,378 3,166 254 | 6365,536 42,337 847 | 6189,648 10,936 542 | 167,452 29,417 666 | 181,419 7,126 479 | 7,884 2,759 73 | 1,074 394 1 | 1,019 71 2 | 30 31 32 |
| I | 199,548 | 370,944 | 325,123 | 545,702 | 763,039 | 432,188 | 62,062,590 | 6731,427 | 1,418,595 | 610,674 | 120,287 | 6,567 | 3,373 | 33 |
| | 197,722 505 1,321 | 369,265 1,480 199 | 321,778 901 2,444 | 542,310 3,027 365 | 755,371 2,177 5,491 | 430,564 1,384 240 | 62,034,660 10,387 17,543 | 6727,358 3,457 612 | 1,397,033 9,093 12,469 | 607,318 2,879 477 | 117,242 639 2,406 | 6,316 81 170 | 3,344 21 8 | 34 35 36 |
| | 233,616 | 148,996 | 492,249 | 265,028 | 974,793 | 220,435 | 9,242,926 | 1,659,831 | 77,582,620 | ⁷ 1,242,473 | 2,182,435 | 20,068 | 5,101 | 37 |
| | 123,042 101,409 £,073 11,740 | 113,837 | 244,848 201,621 15,365 24,119 | 207,308 | 525,505 432,985 28,537 55,114 | 168,912 155,700 13,212 | 7,677,805 6,636,537 400,846 8507,655 | 1,472,292 | 6,536,132 ! 5,743,997 ! 366,198 | 1,129,498 1,071,989 (⁷) | 2,005,555 1,775,722 119,874 102,277 | 12,077 8,676 499 2,536 | 4,169 3,397 772 | 38 39 40 41 |
| | 1,820 | 8,332 | 3,743 | . 16,634 | 8,869 | ا | 132,767 | 96,338 | (7) | (7) | 7,682 | 366 | J | 42 |
| | 110,574 61,649 1,502 47,423 | 35,159 22,548 3,478 9,133 | 247,401 135,057 1,686 110,658 | 57,720 38,621 3,265 15,834 | 449,288 267,989 4,668 176,631 | 51,523 36,020 3,725 11,778 | 1,565,121 920,038 11,276 633,807 | 187,539 128,107 9,155 50,277 | 1,046,488 561,358 9,233 475,897 | (7) (NA) (NA) (NA) | 176,880 112,575 429 63,876 | 7,991 4,207 39 3,745 | 932 678 15 239 | 43 44 45 46 |
| | 97,041 | 966,609 | 214,721 | 9131,687 | 363,473 | ⁹ 67,675 | 1,581,566 | 275,071 | 1,181,581 | 216,341 | 146,996 | 7,628 | ⁹ 2,056 | 47 |
| | 3,068 | 2,725 | 5,893 | 5,216 | 7,938 | 2,659 | 18,928 | 6,356 | 15,138 | 5,283 | 947 | 94 | 59 | 48 |
| | 472 917 612 925 | 617 1,163 652 269 | 872 1,769 1,245 1,752 | 1,100 2,332 1,209 539 | 1,429 2,404 1,505 2,273 | 632 1,297 449 268 | 3,754 5,738 3,464 5,302 670 | 1,541 3,268 879 641 | 2,942 4,590 2,866- 4,188 | 1,368 2,674 721 501 | 125 245 61 472 44 | 18 29 13 27 | 17 29 8 4 | 49 50 51 52 53 |
| | | | | | | | | | | | 45,034 | | 834 | 54 |
| | 33,124 24,925 2,344 464 379 2,680 1,529 | 24,110 17,655 2,100 407 70 1,886 1,134 | 75,559 56,335 5,607 1,198 796 6,659 3,263 | 46,973 33,508 4,574 803 127 4,001 1,990 | 122,499 90,715 7,573 1,949 1,120 12,089 5,970 | 23,652 17,064 1,782 426 44 2,452 1,084 | 465,254 328,757 30,875 8,162 5,142 45,471 31,190 | 79,606 55,172 7,030 2,137 177 9,632 2,930 | 337,606 239,598 22,201 5,055 3,661 34,127 22,914 | 59,356 41,431 5,042 1,236 152 7,340 2,160 | 31,973 3,187 312 354 3,670 4,715 | 2,762 2,173 176 26 13 201 109 | 629 48 13 2 96 25 | 55 56 57 58 59 60 |
| | 803 30,533 | 858 16,959 | 70,103 | 1,970 35,785 | 3,083 | 18,822 | 15,657 466,015 | 2,528 79,403 | 10,050 356,729 | 1,995 | 823 46,087 | 3,212 | 699 | 61 62 |
| | , | ,,,,, | , | 1 | ,,,,, | -, | , | , - | , , | 1 | () | , - | | |

| | | | | All emp | loyees | | |
|----------------------------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------|--|
| Line no. | Ind. | | Numb | er | Payroll (\$1,000) | | |
| | | | 1954 | 1939 | 1954 | 1939 | |
| | 14 | Nonmetallic minerals, except fuels, miningContinued | | | | | |
| 1 | 145 | Clay, ceramic, and refractory minerals13 | 8,231 | 7,936 | 26,504 | 6,992 | |
| 2 3 4 5 6 7 | 1452 1453 1454 1455 1456 1457 1459 | Bentonite. Fire clay ¹³ Fuller's earth. Kaolin and ball clay ¹³ Feldspar. Magnesite and brucite. Clay, ceramic, and refractory minerals, n.e.c. ¹³ | 634 1,988 564 3,148 616 132 | 419 2,317 678 3,237 566 228 | 2,135 6,598 1,744 9,943 1,722 | 2,144 746 2,347 496 324 | |
| 9 | 1459 | Natural abrasives, except sand | 1,149 285 | 491 | 3,823 | 489 | |
| 10 11 | 1462 1469 | Abrasives, except sand. Abrasive stones, natural. Natural abrasives, except sand, n.e.c. | 42 243 | 443 | 1,161 132 1,029 | 479 | |
| 12 | 147 | Chemical and fertilizer mineral mining | 21,135 | 12,231 | 96,233 | 17,270 | |
| 13 14 15 16 17 18 19 | 1472 1473 1474 1475 1476 1477 1479 | Barite. Fluorspar. Fotash, soda, and borate minerals. Phosphate rock. Rock salt. Sulfur. Chemical and fertilizer mineral mining, n.e.c. | 1,125 1,187 6,168 5,439 1,925 3,864 1,427 | 854 1,396 2,438 3,754 1,561 2,024 204 | 3,874 4,495 32,490 21,527 8,571 19,465 5,811 | 752 1,362 4,756 3,729 1,974 4,456 241 | |
| 20 | 1481 | Nonmetallic minerals, except fuels, contract services | 639 | 335 | 2,327 | 368 | |
| 21 | 149 | Miscellaneous nonetallic minerals, except fuels | 5,457 | 4,669 | 18,825 | .5,193 | |
| 22 23 24 25 26 27 | 1492 1493 1494 1495 1496 1497 | Gypsum ¹⁵ Mica. Native asphalt and bitumens. Pumice amd pumicite. Talc, soapstone, and pyrophyllite. Peat. | 449 710 539 264 1,453 338 | 1,424 210 853 127 1,137 184 | 1,851 1,343 2,027 941 4,794 912 | 1,857 138 893 126 1,189 | |
| 28 | 1498 1499 | Vermiculite and miscellaneous nonmetallic minerals, n.e.c | 1,704 | 734 | 6,957 | 846 | |

NA Not available.

Includes statistics for 334 salaried employees paid \$1,091,000 at central offices not classified by industry.

Excludes figures for the uranium-radium-vanadium ores industry. Data were not obtained in the 1954 minerals census on the value of shipments and the cost of ores received for milling for establishments in this industry. For the magnitude of this industry in terms of employment, certain expense items, and horsepower, see the figures shown for Industry 1094 - Uranium-radium-vanadium ores.

The figures shown represent gross shipments from these industries and contain duplication due to the inclusion of shipments of crude ores to other establishments in the same industries for milling. For all metal mining, this duplication in 1954 amounted to about 11 percent of the gross shipments, and for 1939 to about 4 percent. This duplication was most significant in the copper ores industry, amounting for 1954 to about 19 percent and for 1939 to about 3 percent; in the lead and zinc ores industries, amounting for 1954 to about 17 percent; and in the tungsten ores industry, amounting for 1954 to about 17 percent; in the manganese ores industry, amounting for 1954 to about 17 percent; in the manganese ores industry, amounting for 1954 to about 18 percent.

*Includes statistics for nonproducing metal mining establishments which were not classified by industry, as follows: 67 employees, \$94,000 for payrolls; 50 production and development workers, 106,000 man-hours for such workers, and \$71,000 for wages of such workers; and 1,000 horsepower for equipment at such establishments.

payrolls; 50 production and development workers, 106,000 man-hours for such workers, and \$71,000 for wages of such workers; and 1,000 horsepower for equipment at such establishments.

Sigures for Industry 1099 - Metallic minerals, n.e.c., are included with the figures for Industries 1063 and 1069 - Molybdenum, chromium, cobalt, and nickel ores, amounting to less than 1 percent of the combined totals.

The figures for 1954 represent gross shipments from these industries and contain duplication due to the inclusion of shipments of raw coal to other establishments in the same industry for preparation. For the anthracite industry in 1954 this duplication amounted to about 32 percent of the gross shipments; and for the bituminous coal industry to 13 percent of the gross shipments. The 1939 figures represent met shipments, excluding such duplication; gross value figures are not available. However, shipments for preparation represented a smaller proportion of total shipments for these industries in 1030 than 150056.

industries in 1939 than in 1954.

Complete data are not available to compute "value added" for the natural gasoline and cycle condensate industries for 1954 and 1939, and for oil- and gas-field contract services industries for 1939. However, partly estimated figures for value added in these industries have been included in the totals for Major Group 13 - Crude Petroleum and Natural Gas Extraction in order that the figures for "value added" will bear a reasonable relation-

ahip to other statiatics shown.

| | Production and development workers | | | | | | nipments | Value | e added | Capital | | | |
|-----------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------|------------------------------------|----------------------------------------|
| Nı | mber | Man- (1,0 | hours | Wag (\$1, | es 000) | | (\$1,000) | | nining L,000) | ,000) tures, | | egate power | Line no. |
| 1954 | 1939 | 1954 | 1939 | 1954 | 1939 | 1954 | 1939 | 1954 | 1939 | (\$1,000) | 1954 | 1939 | |
| 7,464 | 7,233 | 15,377 | 12,805 | 22,486 | 5,429 | 103,768 | 18,376 | 78,437 | 14,423 | 9,062 | 356 | 85 | , |
| 57% 1,803 51(2,820 57% 121 1,053 | 357 357 2,135 562 2,990 512 216 3 461 | 1,340 3,123 1,109 6,159 1,235 237 2,174 | 687 3,046 1,051 5,702 1,016 437 866 797 | 1,916 5,670 1,381 8,115 1,523 469 3,412 | 309 1,817 438 1,743 383 300 439 | 21,830 22,205 6,012 31,892 146,670 1,655 13,504 | 1,982 4,089 2,107 6,877 981 1,396 944 1,335 | 16,350 17,467 4,179 25,249 4,037 1,372 9,783 3,681 | 1,463 3,510 1,402 5,152 859 1,289 748 | 642 1,327 525 4,291 408 17 1,852 | 34 101 23 97 29 14 58 | 7 18 15 30 6 2 7 | 2 3 4 5 6 |
| 209 | | 78 446 | 797 | 132 800 | 346 | 326 4,148 | 1,335 | [236] 3,445 | | 398 | { 1 9 | } 5 | 10 11 |
| 17,264 | 10,586 | 36,347 | 21,062 | 73,215 | 12,230 | 457,036 | 74,090 | 340,188 | 61,683 | 37,494 | 920 | 276 | 12 |
| 1,036 969 4,736 4,578 1,659 3,077 1,209 | 1,287 2,049 3,372 1,380 1,517 | 2,403 1,944 9,359 10,127 3,861 6,229 2,424 | 1,439 2,568 4,388 6,680 2,608 3,031 348 | 3,451 3,348 23,024 17,087 7,117 14,619 4,569 | 597 1,134 3,445 2,871 1,434 2,545 204 | 18,269 1415,040 107,752 14117,853 35,658 140,685 21,779 | 2,065 3,398 17,031 12,286 6,896 31,812 602 | 14,051 9,666 82,210 62,020 30,013 124,155 18,073 | 1,652 2,656 13,330 9,003 5,721 28,863 458 | 1,012 738 8,920 11,338 2,186 8,845 4,455 | 67 49 187 356 48 161 52 | 10 21 61 113 23 45 | 13 14 15 16 17 18 19 |
| 614 | 307 | 1,258 | 632 | 2,214 | 320 | 6,571 | 966 | 4,884 | 725 | 381 | 39 | 18 | 20 |
| 4,723 | | 9,660 | 8,064 | 15,223 | 4,029 | 59 , 520 | 14,939 | 44,918 | 11,821 | 7,593 | 235 | 75 | 21 |
| 399 670 451 223 1,297 309 | 190 730 122 970 157 | 926 1,197 987 440 2,778 629 2,703 | 2,466 361 1,330 198 2,068 246 1,395 | 1,567 1,256 1,443 748 4,141 810 5,258 | 1,640 118 608 119 807 101 636 | 6,629 4,125 6,424 3,393 11,819 2,270 24,860 | 4,569 327 2,968 387 3,269 378 3,041 | 5,350 3,283 4,857 2,741 9,486 1,763 | 3,756 276 2,554 301 2,441 338 2,155 | 2,423 860 552 415 1,197 194 | 28 17 31 24 36 23 76 | 29 2 13 2 12 3 | 23 24 25 |

⁸Represents gross shipments from this industry and contains duplication due to the inclusion of shipments of crude natural gas liquids from one

employees, \$226,000 for payrolls; 180 production and development workers, 353,000 man-hours for such workers, and \$188,000 for wages of such workers; and 5,000 horsepower for equipment at such establishments.

10 Excludes data for dimension stone quarries operated in conjunction with dressing plants. Such establishments are classified in the manufacturing industries for 1954. The value of shipments of such excluded establishments for 1954 for all types of dimension stone was \$59,968,000 and the number of employees at them was 9,101. The 1939 data have been revised to exclude such establishments. All dimension slate establishments were classified in the manufacturing industries for 1954.

classified in the menufacturing industries for 1954.

1Excludes data for quarries included in establishments classified in manufacturing and wholesale trade industries. The 1954 value of shipments of stone by such excludes quarries was \$18,847,000, over 85 percent of which was limestone. Such operations produced and consumed in the same establishment in 1954 limestone valued at approximately \$100,000,000. The 1939 statistics have been revised to approximately exclude data for such quarries.

12 for 1954, excludes data for sand and gravel mining in establishments classified in manufacturing and wholesale trade industries. The 1954 value of shipments of sand and gravel from such operations was \$12,290,000 and such operations produced and consumed in the same establishment sand and gravel valued at approximately \$10,500,000. The 1939 statistics include data for such quarries, but they were probably relatively much less important in that year. Excludes for both years data for noncommercial operations.

13 for 1954, excludes data for clay mining in clay products establishments classified in manufacturing industries. The 1954 value of clay produced and consumed in such establishments was approximately \$80,000,000 for common clay and shale, \$18,000,000 for fire clay, and \$1,500,000 for kaolin and ball clay. The 1939 statistics have been revised to exclude data for such clay mining.

14 The figures shown represent gross shipments from these industries and contain duplication due to the inclusion of shipments of crude minerals to other establishments in the same industries for preparation. For all nonmetallic minerals, except fuels, industries this duplication amounted for 1954 to only about 3 percent. This duplication was most significant in the feldspar industry, amounting to about 6 percent; in the fluorspar industry, shipments from such operations was \$3,685,000, and such establishments classified in manufacturing industries. The 1954 value of gypsum shipments from such operations was \$3,685,000, and such establishm

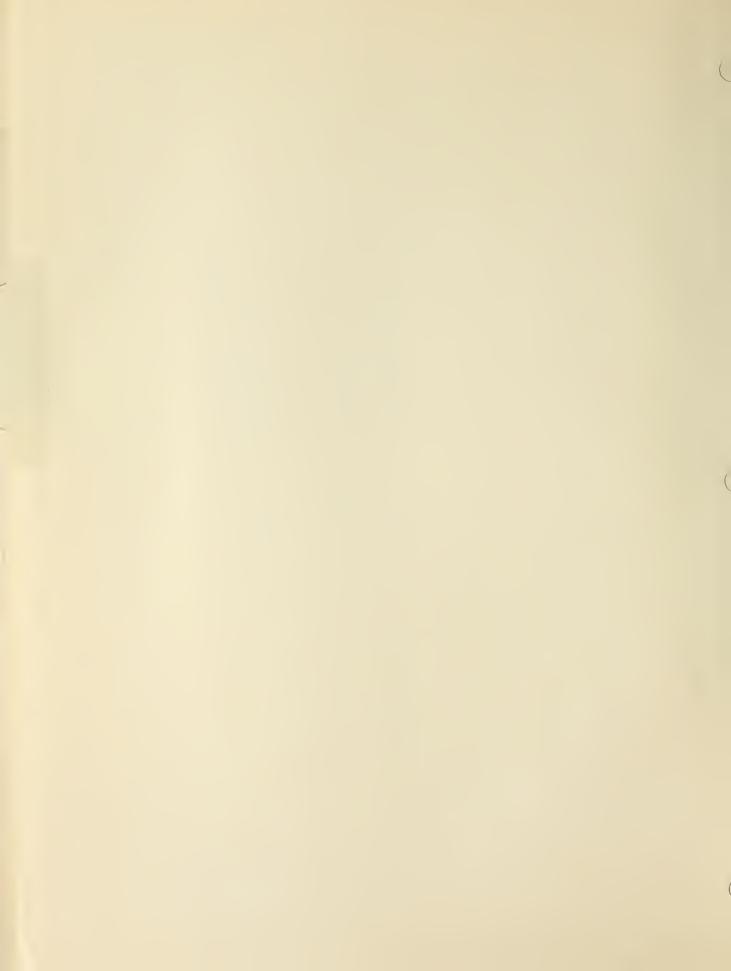
statistics include data for such mining operations.

DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS WASHINGTON 25, D. C.

OFFICIAL BUSINESS

Postage and Fees Paid
U. S. Department of Commerce





1954 Census of Mineral Industries

January 1956

Series:

MI-10-1

IRON ORES

The value of shipments of the iron ores industry amounted to \$548 million in 1954. The principal expenses of the industry included \$144 million for wages and salaries, \$76 million for supplies, \$13 million for iron-bearing materials received for beneficiation, \$24 million for fuel and purchased electric energy, and \$48 million for contract work. The cost of purchased machinery installed was \$37 million. Employment in the industry averaged approximately 32 thousand for the year. Capital expenditures for exploration and development work, new construction and major alterations, and new and used machinery amounted to \$85 million. Total horsepower of equipment available for use by establishments in the industry was nearly 2 million. Water intake for use during the year, including mine water, was 27 billion gallons.

The value of shipments of the iron ores industry in 1954 represented almost a fourfold increase since 1939, the year covered by the preceding Census of Mineral Industries. Employment in the industry rose by almost one-half over the same period, while horsepower of power equipment available in 1954 was three times as great as in 1939. Establishments primarily producing iron ores in 1954 were located in 19 States. However, Minnesota alone accounted for approximately 60 percent of the total value of shipments of the industry, with Michigan accounting for an additional 13 percent. The five next ranking States, in order of value of shipments, were Alabama, New York, Utah, Pennsylvania, and California.

In 1954, a total of 77 million long tons of usable iron ores was produced at minerals establishments, approximately a 50 percent increase over production in 1939. Of the 1954 total, 49 million tons were direct-shipping ores and 28 million represented concentrates and agglomerates (iron sinter, pellets, nodules, and briquets). Comparable figures for 1939 were 42 million tons of direct-shipping ores and 9 million tons of beneficiated ores.

Approximately 16 million tons of iron ore was imported in 1954, at a value of about \$119 million, about one-fifth as much as total domestic production. Venezuela accounted for about one-third of the total imports and Canada, almost an additional one-fourth. Imports in excess of a million tons were also recorded for Peru, Chile, and Sweden.

The iron ores industry represents establishments primarily engaged in mining, beneficiating, or otherwise preparing iron ores, such as hematite, limonite (brown ore), magnetite, and siderite (carbonate), including manganiferous ores valued chiefly for their iron content. More than three-fourths of the ore mined in 1954 was obtained from open-pit mines, and less than one-fourth from underground operations. In 1939, less than two-thirds of the crude ore was extracted by open-pit methods. Over the same period there was a substantial increase in the proportion of ore requiring beneficiation. In 1939, only about one-fourth of the crude ore mined was beneficiated prior to shipment. In 1954, more than half of the ore mined was concentrated or agglomerated.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

There was a significant variation among the States in respect to the grade of ore and the type of mine. Only about 45 percent of the crude ore mined in Minnesota and in California was of direct-shipping grade, 55 percent of the ore mined requiring beneficiation. Ore mined in Michigan, in Wisconsin, and in the western States (except California) was predominantly of direct-shipping grade, whereas ore mined in New York, New Jersey, Pennsylvania, and in the southern States required beneficiation for the most part. However, a substantial tonnage of Alabama ore was shipped directly to consumers. Variation by State in respect to the type of operation followed a somewhat different pattern. Mines in Minnesota were predominantly of the open-pit type, whereas most of the ore mined in Michigan and Wisconsin, the other States in the Lake Superior district, was obtained from underground operations. The two types of mines provided about equal proportions of the Alabama ore, but the balance of the production in the southern States was from open-pit mines. Open-pit operations also furnished most of the iron ore production in all other States, except New Jersey, Pennsylvania, Missouri, and Wyoming, where underground mines predominated.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Iron Ores," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the coopetation of the Bureau of Mines (U. S. Department of the Interior) to minimize duplication in canvassing mineral establishments. The census report form used for the iron ores industry also provided the information required by the Bureau of Mines for its annual statistics on iron ore.

Table 1 .-- PRINCIPAL STATISTICS FOR THE IRON ORES INDUSTRY IN THE UNITED STATES: 1954, 1939, 1929, AND 1919

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.)

| Item | 1954 | 1939 | 1929 | 1919 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------|
| Crude iron ore mined, total ¹ 1,000 long tons | 105,836 | 59,669 | ² 73,963 | ² 61,173 |
| Direct-shipping ore, totaldodo | 48,962 | 42,747 | ² 73,963 | (NA) |
| From underground operationsdodo | 17,865 31,097 | 18,306 24,441 | ² 31,567 ² 42,396 | (NA) (NA) |
| Beneficiating-grade ore, totaldodo | 56,874 | 16,922 | (²) | (NA) |
| From underground operations | 6,345 50 ,5 29 | 2,807 14,115 | (²) (²) | (NA) (NA) |
| Crude iron ore beneficiated ³ dodo | 57,094 | 16,924 | (NA) | (NA) |
| Value of shipments ⁴ \$1,000 | 548,451 | 150,872 | 197,335 | 218,218 |
| Value added in mining ⁵ do | 436,859 | 133,391 | 167,126 | 177,400 |
| Number of employees, total ⁶ | 32,174 | 22,651 | 31,113 | 49,376 |
| Production and development workers | 28,207 3,967 | 20,377 2,274 | 28,623 2,490 | 46,339 3,037 |
| Man-hours worked by production and development workers1,000 | 53,286 | 38,513 | (NA) | (NA) |
| Principal expenses, total\$1,000 | 304,058 | 50,807 | 77,644 | 124,562 |
| Wages of production and development workersdo Saleries of all other employeesdo Suppliesdo Iron-bearing materials received for benefication ⁸ do Fueldo Purohased electric energydo Contract workdo | 119,661 24,374 75,529 12,837 9,249 14,438 47,970 | 27,431 5,895 10,791 (NA) 2,280 4,174 236 | 41,050 6,385 718,717 (NA) 75,332 74,607 1,553 | 76,699 7,045 27,842 (NA) 8,871 1,636 |
| Purchased machinery installeddodo | 36,521 | (NA) | (NA) | 2,469 (NA) |
| Capital expenditures (development work, construction, | ,>~- | (32-) | (/ | () |
| machinery, and equipment)do | 84,952 | (NA) | (NA) | (NA) |
| For machinery and equipment onlydo | 28,647 | 3,760 | 4,016 | (NA) |
| Horsepower rating of power equipment91,000 | 1,810 | 600 | 501 | 381 |
| Water intake10 | 26,895 | (NA) | (NA) | (NA) |

shown. Figures for years prior to 1954 include manganiferous iron ore.

2Figures for 1929 and 1919 represent usable ore. Beneficiating-grade ore is included with direct-shipping ore. It is estimated that approximately one-eighth of the total usable ore was beneficiated in 1929 and 1919.

3Includes crude ores concentrated and natural fines agglomerated. For 1954, excludes manganiferous iron ore beneficiated; inclusion of manganiferous ore would add less than one percent to the 1954 total shown.

*Represents value of shipments and interplant transfers of direct-shipping and beneficiating-grade iron ores, iron concentrates and agglomerates, and value of secondary products and services. Figures for years prior to 1954 represent value of production and services.

For 1954, represents value of products shipped plus capital expenditures less cost of supplies, iron-bearing materials represents value of products shipped plus capital expenditures less cost of supplies, iron-bearing materials received for beneficiation, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "Value added," as computed for 1954, represents the value added during the year in the iron ores industry by mining and beneficiating iron ores, producing other products, performing services for others, and in development of iron ores properties.

*Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

*Expenditures for fuel and purchased electric energy used by nonproducing operations are included with cost of supplies.

*Represents iron ore, including manganiferous iron ore, received for concentration and natural fines, flue dust, and foreign over received for agglomeration.

foreign ore received for agglomeration.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

10 Represents total water intake from publicly and privately owned systems, and mine water used.

¹Statistics for 1954 exclude manganiferousiron ore mined, ore containing five percent or more manganese but valued chiefly for its iron content; inclusion of manganiferous ore would add approximately one-half of one percent to the 1954 total

| | | | Middle | Atlantic |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------|---------------------------------|
| Line no. | Item | United States, total | New Jersey | New York and Pennsylvania |
| 1 | Crude iron ore mined, total ¹ | 105,836 | 1,025 | 7,372 |
| 2 3 | By grade: Direct-shipping oredodododo | 48,962 56,874 | (D) (D) | (D) |
| 4 5 | By source: From underground operationsdodododo | 24,210 81,626 | . 1,025 | (D) (U) |
| 6 | Value of shipments ² \$1,000 | 548,451 | 9,427 | 40,682 |
| 7 | Value added in mining ³ do | 436,859 | 7,805 | 23,394 |
| 8 | Number of employees, total ⁴ | 32,174 | 887 | 3,016 |
| 9 10 | Production and development workers | 28,207 3,967 | 797 90 | 2,640 376 |
| 11 | Man-hours worked by production and development workers1,000 | 53,286 | 1,468 | 4, 944 |
| 12 | Principal expenses, total\$1,000 | 304,058 | 6,457 | 30,305 |
| 13 14 15 | Wages of production and development workersdo Salaries of all other employeesdo Supplies and iron-bearing materials received for | 119,661 24,374 | 3 , 556 523 | 11,693 2,242 |
| 16 | beneficiationdo Fuel. do | 88,366 9,249 | 1,655 69 | 6,701 2,152 |
| 17 18 | Purchased electric energydodododo | 14,438 47,970 | 654 | 7,517 |
| 19 | Purchased machinery installeddo | 36,521 | 137 | 4,283 |
| 20 | Capital expenditures (development work, construction, machinery, and equipment)do | 84,952 | 893 | 3,365 |
| 21 | For machinery and equipment onlydo | 28,647 | 137 | 2,360 |
| 22 | Horsepower rating of power equipment ⁵ | 1,810 | 25 | 160 |
| 23 | Water intake ⁶ 1,000,000 gallons | 26,895 | 606 | 4,099 |

DWithheld to avoid approximately disclosing figures for individual companies.

1Excludes iron ore containing five percent or more manganese. See table 1, footnote 1.

2See table 1, footnote 4.

3See table 1, footnote 5.

| | North Central | | | South | | | West | | |
|-----------------------------------|------------------------------------|------------------------------|-------------------------------|-------------------|-------------------------------------------|-----------------------|----------------------|-----------------------------------------------------------------------|----------------------|
| Michigan | Minnesota . | Wisconsin and Missouri | Alabama | Texas | Georgia, Tennessee, and Arkansas | Utah | Nevada | Montana, Wyoming, Colorado, New Mexico, and California | Line no. |
| 11,131 | 66,258 | 1,890 | 9,764 | 2,557 | 803 | 2,920 | 351 | 1,765 | 1 |
| (D) (D) | 29,257 37,001 | (D) (D) | 3,416 6,348 | (D) | (D) (D) | 2,920 | 351 | (D) | 2 3 |
| 9,935 1,196 | 2,721 63,537 | 1,775 115 | 4,963 4,801 | 2,557 | 803 | 2,920 | 351 | (D) | 4 5 |
| 70,282 | 327,130 | 12,091 | 46,204 | 6,318 | 1,011 | 19,357 | . 2,025 | 13,924 | 6 |
| 57,595 | 278,025 | 10,232 | 27,055 | 5,138 | 723 | 13,201 | 998 | 12,693 | 7 |
| 7,272 | 14,564 | 1,327 | 3,736 | 340 | 102 | 424 | 95 | 411 | 8 |
| 6,506 766 | 12,520 2,044 | 1,207 120 | 3,370 366 | 312 28 | 96 6 | (D) | 78 17 | (D) | 9 10 |
| 12,582 | 23,420 | 2,219 | 6,211 | 664 | 215 | (D) | 186 | (D) | 11 |
| 55,078 | 151,072 | 8,707 | 34,944 | 2,755 | 632 | 7,572 | 1,230 | 5,306 | 12 |
| 29,911 4,903 | 51,341 12,243 | 5 ,2 56 744 | 12,941 2,483 | 1,301 178 | 267 2 2 | 2,019 | { 431 93 | } 1,888 | 13 14 |
| 12,068 439 { 3,037 4,720 | 45,964 5,389 6,252 29,883 | 1,810 58 . 734 105 | 16,878 449 1,490 703 | 561 178 537 | 168 97 7 8 | 1,247 212 4,094 | 318 93 295 | 996 113 2,309 | 15 16 17 18 |
| 3,957 | 23,564 | 468 | 1,916 | 181 | 212 | (D) | (D) | 523 | 19 |
| 11,534 | 61,947 | 1,316 | 2,287 | 277 | 267 | (D) | (D) | 2,710 | 20 |
| 3,459 | 18,900 | 403 | 2,159 | 171 | 197 | (D) | (D) | 523 | 21 |
| 299 | 1,023 | 52 | 138 | 32 | 10 | 33 | 5 | 33 | 22 |
| 1,571 | 10,333 | 177 | 3,283 | 6,327 | 396 | 18 | ••• | 85 | 23 |

⁴See table 1, footnote 6. ⁵See table 1, footnote 9. ⁶See table 1, footnote 10.

Table 3.--PRODUCTION AND SHIPMENTS OF USABLE IRON ORE IN THE UNITED STATES: 1954 AND 1939

(Includes production in the "Iron ores" industry and also production as secondary products in other mineral industries. The production of sinter at blast furnaces, at custom sintering plants, and as a byproduct of the manufacture of sulfuric acid from iron pyrites is excluded.)

| | | 19 | 54 | | 19 | 1939 | | |
|-------------------------------------------------------|--------------------|--------------------|-----------------------------------------|-----------------------------------------------|--------------------------------|-----------------------------------------------|--|--|
| | Produ (1,000 1c | ction ong tons) | Shipmen interplant | ts and transfers | Production | | | |
| Product | Gross weight | Iron content | Gross weight (1,000 long tons) | Value f.o.b. mine or plant (\$1,000) | Gross weight (1,000 long tons) | Value f.o.b. mine or plant (\$1,000) | | |
| Usable iron ore, except manganiferous iron ore, total | 77,258 | 40,036 | 76,250 | 534,382 | 50,884 | 148,514 | | |
| Direct-shipping ore | 48,962 | 24,828 | 48,303 | 315,436 | 42,360 | 120,968 | | |
| Beneficiated ore, total | 28,296 | 15,208 | 27,947 | 218,946 | 8,524 | 27,546 | | |
| ConcentratesSinter and other agglomerates | 22,765 5,531 | 11,939 3,269 | 22,472 5,475 | 156,491 62,455 | (NA) (NA) | (NA) (NA) | | |
| Usable manganiferous iron ore, total1 | 481 | 194 | 487 | 2,881 | 761 | 2,166 | | |
| Direct-shipping ore | 8 <i>5</i> 396 | 35 159 | 89 398 | 535 2,346 | 387 3 74 | 1,058 1,108 | | |

NA Not available.

COMM-DC/8663

Page 6 of 6

DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS WASHINGTON 28, D. C.

OFFICIAL BUSINESS

PRNALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, \$300

¹ Ore containing five percent or more manganese but valued chiefly for its iron content.

April 1956 Series:

ies: MI-10-2

COPPER ORES

The value of shipments of the copper ores industry amounted to approximately \$509 million in 1954. The principal expenses of the industry included \$123 million for wages and salaries, \$73 million for supplies, \$101 million for crude ore received for milling, \$15 million for fuel and purchased electric energy, and \$44 million for contract work. The cost of purchased machinery installed was \$24 million. Capital expenditures for exploration and development work, new construction and major alterations, and new and used machinery amounted to \$82 million. Total horsepower of equipment available for use by establishments in the industry was over 1.4 million. Water intake for use during the year, including mine water, was 58 billion gallons.

Value of shipments of the copper ores industry in 1954 was three and one-half times as large as in 1939, the year covered by the preceding Census of Mineral Industries. Employment in the industry dropped slightly between 1939 and 1954, but the horsepower of power equipment available for use about doubled over this period. Arizona was the leading State in the copper ores industry in 1954, accounting for about 40 percent of the total value of shipments. The four next ranking States, in order of value of shipments, were Utah, Montana, Nevada, and New Mexico. In all, the Mountain States accounted for approximately 95 percent of the total United States value of shipments for the industry, with Michigan accounting for most of the remaining production.

Ores and concentrates produced at all mineral establishments in 1954 contained approximately 1,670 million pounds of recoverable copper, an increase of about 16 percent over the comparable 1939 total. In both years, establishments in the copper ores industry accounted for nearly 97 percent of the total copper recoverable from domestic ores and concentrates. Imports of copper ores and concentrates in 1954 were valued at approximately \$66 million and contained about 241 million pounds of recoverable copper, approximately one-seventh as much as domestic mine production. Canada accounted for approximately one-fourth of the total imports and the Philippine Republic and Cuba, each an additional 15 percent. Imports valued in excess of \$5 million were also recorded for the Union of South Africa, Chile, Mexico, and Peru.

The copper ores industry represents establishments primarily engaged in mining, milling, or otherwise preparing copper ores, such as native copper, oxidized copper ores, sulfide copper ores, and complex copper ores, including establishments primarily engaged in the recovery of copper by precipitation and leaching operations. Of the 91 million tons of crude ore mined during 1954, approximately 85 percent was obtained from open-pit operations and 15 percent from underground mines. Ore mined in Arizona showed a similar percentage distribution by type of operation. In Utah, Nevada, and New Mexico, the crude ore was obtained almost entirely from open-pit operations, whereas in all other States underground mines were the sole or predominant source of copper ores. In all States, ores were generally milled prior to shipment to smelters. Concentrates provided approximately 85 percent of the total recoverable copper obtained from domestic mine production and copper-water precipitates accounted for more than half of the balance.

These statistics were derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Copper Ores," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) to minimize duplication in canvassing mineral establishments. The census report form used for the copper ores industry also provided the information required by the Bureau of Mines for its annual statistics on copper ore.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

Table 1.--PRINCIPAL STATISTICS FOR THE COPPER ORES INDUSTRY IN THE UNITED STATES: 1954, 1939, 1929, AND 1919

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.)

| | | * ************************************* | | |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------|
| Item | 1954 | 1939 | 1929 ¹ | 1919 ¹ |
| Crude ore mined | 90,992 | 52,118 | (NA) | (NA) |
| Direct-smelting and leaching ores shippeddo | ² 4,055 | ³ 1,658 | (NA) | (NA) |
| Crude ore and tailings milleddo | 488,357 | 51,571 | (NA) | (NA) |
| Copper, lead, zinc, gold, and silver concentrates produceddodo | 2,769 | 2,106 | (NA) | . (NA) |
| Copper-water precipitates shipped ⁵ dodo | 90 | (NA) | (NA) | (NA) |
| Value of shipments, total ⁶ \$1,000 | 508,729 | 141,635 | 283,517 | 179,730 |
| Milling-grade ore | 98,818 ² 29,278 328,200 28,294 24,139 | 3,956 ³ 17,848 106,812 7,101 ⁷ 5,918 | 282,058 | 179,006 |
| Value added in mining ⁸ do | 334,831 | 108,495 | 221,690 | 130,167 |
| Number of employees, total9 | 26,088 | 26,752 | 47,967 | 46,896 |
| Production and development workers | 21,545 4,543 | 23,844 2,908 | 44,502 3,465 | 43,717 3,179 |
| Man-hours worked by production and development workers1,000 | 46,677 | 51,241 | (NA) | (NA) |
| Principal expenses, total\$1,000 | 355,227 | 75,704 | 145,163 | 123,993 |
| Wages of production and development workers | 98,493 24,521 72,822 100,693 8,576 6,278 43,844 | 34,486 8,078 23,562 (NA) 4,168 4,899 511 | 73,200 10,136 43,995 (NA) 9,210 6,027 2,595 | 66,390 8,040 34,275 (10) 11,310 3,556 422 |
| Purchased machinery installeddo | 23,816 | (NA) | (NA) | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 82 , 131 | (NA) | (NA) | (NA) |
| For machinery and equipment onlydo | 23,194 | 4,084 | 13,084 | (NA) |
| Horsepower rating of power equipment 11 | 1,414 | 753 | 702 | 524 |
| Water intake ¹² ,000,000 gallons | 58,417 | (NA) | (NA) | (NA) |

NA_{Not} available.

of direct-smelting and leaching ores shipped during that year.

Represents production of direct-smelting ore only.

¹Excludes nonproducing operations. In 1929 and 1919, statistics for nonproducing operations are available only for the copper, lead, zinc, gold, and silver ores industries as a group. For these years, employment and principal expenses of nonproducing operations for this group of industries were about five percent of the comparable figures for producing operations.

Leaching ore represents the major portion of the total tonnage shown for 1954 but less than half of the combined value

⁴Tailings represent approximately two percent of the total shown for 1954.

Strong represent approximately two percent of the total along the strong represent approximately two percent of the total value of proximately two percent of the total value of shipments for 1954 includes the value of milling-grade ore shipped as well as the value of shipments of concentrates produced from such ores. Figures for earlier years represent production except that value of shipments of milling-grade ore is shown for 1939. The value of concentrates produced in 1939 excludes the value of concentrates produced in 1939 exclud from ore received from other establishments but includes the value added at the mill by treating such ores. Inclusion of the full value of concentrates produced from ores from other mines, on a basis comparable with 1954, would add approximately \$4,000,000 to the figures shown for 1939 for concentrates and for the total value of production. The total values shown for 1929 and 1919 exclude the value of shipments of milling-grade ores but include the value of concentrates produced from such

⁷ Includes material valued chiefly for its copper content, amounting to approximately three percent of this total value. ⁸For 1954, represents value of products shipped plus capital expenditures less cost of supplies, crude ore and old tailings received for milling, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, 1929, and 1919, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "Value added," as computed for 1954, represents the value added during the year in the copper ores industry by mining and milling copper ores, producing other products, performing services for others, and in development of copper ores properties.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month. it is not clear whether, as in 1954, this figure includes the estimated value of ores received for custom milling and of ores transferred by a company from its mines to a separately operated mill. In the 1929 and 1939 census reports, the cost of ore purchased was omitted from the 1919 totals of principal expenses and of value of products so that the 1919 figures would be comparable with those for the two subsequent census years. The 1919 figures appear in the table above in this revised form.

1 Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

¹² Represents total water intake from publicly and privately owned systems, and mine water used.

| | | East and South | | We | st | |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------------------------------------------------------|------------------------------------|---------------------------------|--------------------------|--------------------------------------------------------------------------|
| Item | United States, total | (Vermont, Michigan, North Carolina, and Texas) | Arizona | Nevada | Montana and Utah | Idaho, Wyoming, Colorado, New Mexico, Washington, Oregon, and California |
| Crude ore mined, total1,000 short tons | 90,992 | (D) | 43,095 | 9,616 | 27,861 | (D) |
| From underground operationsdo | 13,294 77,698 | (D) | 5,883 37,212 | 27 9,589 | (D) | (D) (D) |
| Direct-smelting and leaching ores shippeddodo | 4,055 | ••• | ¹ 3,838 | 67 | 58 | 92 |
| Crude ore and tailings milleddo | 88,357 | ² 4,601 | 39,315 | (D) | (D) | (D) |
| Copper, lead, zinc, gold, and silver concentrates shippeddo | 2,767 | 55 | 1,288 | (D) | (D) | 217 |
| Copper-water precipitates shipped3do | 90 | | 24 | (D) | (D) | (D) |
| Value of shipments\$1,000 | 508,729 | 24,701 | 201,691 | 42,073 | 205,167 | 35,097 |
| Milling-grade oredoDirect-smelting and leaching oresdo | 98,818 29,278 | (D) | (D) ¹ 27,751 | (D) | (D) | (D) |
| Copper, lead, zinc, gold, and silver concentrates | 328,200 28,294 24,139 | 13,377 (D) | 160,456 9,845 (D) | 29,074 (D) | 111,088 (D) | 34,181 (D) |
| Value added in mining4do | 334,831 | 15,648 | 165,668 | 15,712 | 104,681 | 33,122 |
| Number of employees, total ⁵ | 26,088 | 2,751 | 11,489 | 1,512 | 7,821 | 2,515 |
| Production and development workers | 21,545 4,543 | 2,288 463 | 9,421 2,068 | 1,295 217 | 6,332 1,489 | 2,209 306 |
| Man-hours worked by production and development workers | 46,677 | 4,953 | 21,853 | 2,557 | 12,631 | 4,683 |
| Principal expenses, total\$1,000 | 355,227 | 32,039 | 132,991 | 35,870 | 136,258 | 18,069 |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies and crude ore and old tailings | 98,493 24,521 | 8,624 2,253 | 48,214 11,941 | 5,354 1,184 | 27,089 7,713 | 9,212 1,430 |
| received for millingdoFueldoPurchased electric energydoContract workdo | 173,515 8,576 6,278 43,844 | 11,974 1,539 7,649 | 39,029 3,710 2,390 27,707 | 19,338 286 1,315 8,393 | 97,040 2,323 2,093 | 6,134 718 227 348 |
| Purchased machinery installeddo | 23,816 | 11,328 | 7,571 | 464 | 3,245 | 1,208 |
| Capital expenditures (development work, construction, machinery, and equipment)do | 82,131 | 23,437 | 44,384 | 3,435 | 4,215 | 6,660 |
| For machinery and equipment onlydo | 23,194 | 11,327 | 7,279 | 464 | 2,932 | 1,192 |
| Horsepower rating of power equipment ⁶ 1,000 | 1,414 | 198 | 734 | 126 | 269 | 87 |
| Water intake7,000,000 gallons | 58,417 | 15,800 | 14,155 | 4,079 | 21,762 | 2,621 |

Dwithheld to avoid approximately disclosing figures for individual companies.

1see table 1, footnote 2.

2Tailings represent somewhat less than half of the total.

2see table 1, footnote 5.

4see table 1, footnote 8.

5see table 1, footnote 9.

6see table 1, footnote 11.

7see table 1, footnote 12.

Table 3.--RECOVERABLE COPPER CONTENT OF DIRECT-SMELTING ORES AND OLD TAILINGS, CONCENTRATES, AND COPPER-WATER PRECIPITATES IN THE UNITED STATES: 1954 AND 1939

(Thousands of pounds)

| | 19 | 954 ¹ | 1939 ² | | | |
|------------------------------------------------|------------------------------|----------------------------|------------------------------|----------------------------|--|--|
| Product | All mineral industries | Copper ores industry | All mineral industries | Copper ores industry | | |
| Total recoverable copper | 1,669,845 | 1,613,256 | 1,434,890 | 1,384,794 | | |
| Ores and old tailings | 131,351 | 125,816 | (NA) | 171,441 | | |
| Direct-smelting and leaching ores ³ | 131,132 219 | (D) (D) | (NA) (NA) | 171,441 | | |
| Concentrates | 1,402,355 | 1,351,421 | (NA) | 1,114,676 | | |
| Copper concentrates | 1,384,771 17,584 | (D) (D) | (NA) (NA) | (NA) (NA) | | |
| Copper-water precipitates4 | 136,139 | 136,019 | (NA) | 98,677 | | |

DWithheld to avoid approximately disclosing figures for individual companies.

custom milling-grade ore, rather than the recoverable content of such ore shipped during the year.

³Represents only ores for direct processing in manufacturing plants, such as smelters and refineries. For 1954, leaching ores provide nearly one-half of the total. For 1939, represents direct-smelting ores only.

⁴Includes precipitates from ore leached in place.

DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS WASHINGTON 25, D. C.

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, 8300

NANOt available.

1 Figures for 1954 represent shipments for "Ores and old tailings" and for "Copper-water precipitates" and production for "Figures for 1954 represent shipments for "Ores and old tailings" and for "Copper-water precipitates" and production for "Figures for 1954. The copper content of concentrates produced was reported for 1954. The copper content of concentrates produced was reported for 1954. "Concentrates." Only the recoverable content of concentrates produced was reported for 1954. The copper content of concentrates shipped would have been about one million pounds less than the production figure for 1954.

2Represents production. Revised to include the recoverable copper content of concentrates produced from purchased and

May 1956

Series: MI - 10 - 3

LEAD AND ZINC ORES

The value of shipments of the lead and zinc ores industries amounted to approximately \$176 million in 1954. Shipments reported by establishments in these industries producing ores containing both lead and zinc amounted to \$160 million, or over 90 percent of the total for the combined lead and zinc ores industries. Shipments valued at close to \$12 million were reported by establishments producing zinc ores that contained no lead and an additional \$4.6 million was reported for establishments producing lead ores which contained no zinc.

The principal expenses of the three lead and zinc ore industries combined included \$66 million for wages and salaries, \$25 million for supplies, \$35 million for crude ore received for milling, \$8 million for fuel and purchased electric energy, and \$6 million for contract work. The cost of purchased machinery installed was \$6 million. Capital expenditures for exploration and development work, new construction and major alterations, and new and used machinery amounted to approximately \$12 million. Total horsepower of equipment available for use was 753 thousand. Water intake for use during the year, including mine water, was 22 billion gallons.

The value of shipments of the lead and zinc ores industries in 1954 represented almost a threefold increase since 1939, the year covered by the preceding Census of Mineral Industries. Employment declined by approximately 10 percent between 1939 and 1954, but horsepower of power equipment available for use about doubled over this period. Production of lead and zinc ores was reported in many parts of the



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

country with establishments in the lead and zinc ores industries located in more than half of the States. Missouri was the leading State and, together with Kansas and Oklahoma, accounted for more than a fourth of the total United States value of shipments. Utah and Idaho were the second- and third-ranking States, respectively, and with the other Mountain States accounted for more than half of the national total value of shipments.

Ores and concentrates produced at all mineral establishments in 1954 contained approximately 643 million pounds of recoverable lead and 901 million pounds of recoverable zinc, or about 20 percent less than the respective 1939 totals. Establishments in the lead-zinc ores industry accounted for 92 percent, and the lead ores industry an additional 6 percent, of the 1954 total of recoverable lead. The lead-zinc ores industry and the zinc ores industry accounted for 81 percent and 16 percent, respectively, of the recoverable zinc total.

Imports of lead ores, flue dust, and matte in 1954 were valued at about \$48 million and contained 394 million pounds of recoverable lead, or approximately 60 percent as much as total domestic mine production. Zinc ore imports in 1954, valued at about \$54 million, contained slightly more than 1 billion pounds of recoverable zinc, or approximately 10 percent above the domestic mine production. Canada was the principal foreign source for both lead and zinc ores, accounting for approximately 37 percent of the combined value of such imports. Lead and zinc ore imports valued in excess of \$5 million were also recorded from Peru, Union of South Africa, Mexico, Australia, and Bolivia.

The lead ores industry, as defined by the Standard Industrial Classification, represents establishments primarily engaged in mining, milling, or otherwise preparing lead ores containing no zinc. Similarly, the zinc ores industry represents establishments primarily engaged in mining, milling, or otherwise preparing zinc ores containing no lead. Establishments primarily engaged in mining, milling, or otherwise preparing lead-zinc ores are classified in the lead-zinc ores industry. For Census purposes, the industry classification is determined by the chief aggregate value for recoverable metals contained in the ores mined or milled. Since the unit value of gold has not changed since 1939 and the percentage increase in the unit value of silver has been much less than for lead or zinc, a number of establishments which were classified in 1939 as silver or gold mines are classed for 1954 in the lead and zinc ores industries. This change in industry classification affects the comparisons between the two years referred to above.

Of the 19 million tons of crude ore mined in 1954 in the lead and zinc ores industries, approximately 96 percent was obtained from underground operations, and only about 4 percent from open-pit operations. Only Washington and Missouri reported crude ore mined at open-pit operations in excess of 50 thousand tons. Nearly all of the ore mined required milling, with only about 2 percent of the total classified as direct-smelting ore. Only New Jersey, Colorado, and Utah reported shipments of direct-smelting ore in excess of 50 thousand tons.

These statistics were derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Lead and Zinc Ores," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) to minimize duplication in canvassing mineral establishments. The census report form used for the lead and zinc ores industries also provided the information required by the Bureau of Mines for its annual statistics on lead and zinc ores.

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less

| | | | | 19 | 54 | | |
|----------------|--------------------------------------------------------------------------------------------|----------------------------|--------------------|-----------------------|----------------------------|---------------------------|--------------------------|
| Line | 74 | Lead and | | | Lead-z | inc ores indu | stry ² |
| no. | Item | zinc ores industries, | Lead ores industry | Zinc ores industry | Total | Valued chie | efly for |
| | | total | | | TOTAL | Lead | zinc |
| 1 | Crude ore mined1,000 short tons | 18,529 | 838 | 1,556 | 16,135 | 8,895 | 7,240 |
| 2 | Direct-smelting ore and old tailings shippeddodo | ³ 445 | (D) | (D) | 248 | 133 | 115 |
| 3 | Crude ore and old tailings | 519,541 | 816 | 1,528 | 17,597 | 9,813 | 7,784 |
| 4 | Lead, zinc, copper, gold, and silver concentrates produced.do | 1,371 | 25 | 191 | 1,155 | 546 | 609 |
| 5 | Value of shipments, total ⁶ \$1,000 | 175,862 | 4,582 | 11,661 | 159,619 | 90,293 | 69,326 |
| 6 7 | Milling-grade oredodo | 35,816 | 17 | 1,199 | 34,600 | 17,657 | 16,943 |
| 8 | tailingsdodo | ³ 6,758 | 4,562 | 10,137 | 4,111 | 71,545 | 51,911 |
| 9 | silver concentratesdo Other products and servicesdo | 131,397 1,891 | 3 | 325 | 119,345 1,563 | 1,091 | 472 |
| 10 | Value added in mining ⁷ do | 107,335 | 3,407 | 7,734 | 96,194 | 59,307 | 36,887 |
| 11 | Number of employees, total8 | 15,844 | 578 | 1,600 | 13,666 | 7,808 | 5,858 |
| 12 13 | Production and development workers All other employees | 13,591 2,253 | 475 103 | 1,308 292 | 11,808 1,858 | 6,679 1,129 | 5,129 729 |
| 14 | Man-hours worked by production and development workers | 27,553 | 903 | 2,383 | 24,267 | 13,751 | 10,516 |
| 15 | Principal expenses, total\$1,000 | 139,987 | 3,507 | 11,003 | 125,477 | 67,334 | 58,143 |
| 16 17 18 | Wages of production and development workersdo Salaries of all other employeesdo Suppliesdo | 53,674 12,208 24,663 | 1,726 489 | 4,406 1,496 | 47,542 10,223 22,171 | 27,821 6,318 12,197 | 19,721 3,905 9,974 |
| 19 | Crude ore and old tailings received for millingdo | 35,116 | 638 | 3,058 | 33,912 | 14,196 | 19,716 |
| 20 21 22 | Fueldo Purchased electric energydo Contract workdo | 1,408 6,838 6,080 | 55 267 332 | 273 438 1,332 | 1,080 6,133 4,416 | 545 3,760 2,497 | 535 2,373 1,919 |
| 23 | Purchased machinery installeddo | 5,942 | 458 | 1,165 | 4,319 | 2,376 | 1,943 |
| 24 | Capital expenditures (development work, construction, machinery, and equipment)do | 11,520 | 575 | 2,339 | 8,606 | 4,585 | 4,021 |
| 25 | For machinery and equipment onlydo | 2,959 | 116 | 645 | 2,198 | 1,088 | 1,110 |
| 26 | Horsepower rating of power equipment 10 | 753 | 30 | 62 | 661 | 399 | 262 |
| 27 | Water intake ¹¹ 1,000,000 gallons | 22,143 | 247 | 1,492 | 20,404 | 10,762 | 9,642 |

NA Not available.

DWithheld to avoid approximately disclosing figures for individual companies.

Excludes nonproducing operations. For 1929 and 1919, statistics for nonproducing operations are available only for the lead, zinc, copper, gold, and silver ores industries as a group. For these years, employment and principal expenses of non-

producing operations for this group of industries were about 5 percent of the comparable figures for producing operations.

The basis for classifying establishments by industry was changed between 1939 and 1954. The total of the 1954 figures for the "Lead ores" industry plus the figures for those establishments in the "Lead-zinc ores" industry whose products were valued chiefly for the lead contained are comparable with the statistics for the "Lead ores" industry for prior years. Similarly, the combination for 1954 of the "Zinc ores" industry figures and the figures for establishments in the "Lead-zinc ores" industry whose products were valued chiefly for the zinc contained are comparable with the statistics for the "Zinc

ores" industry for prior years.

Tailings represent approximately 25 percent of the combined tonnage of direct-smelting ore and old tailings shipped and about 5 percent of the combined value.

'Represents production of direct-smelting ore only.

Tailings represent less than 10 percent of the combined tonnage of crude ore and old tailings milled. Almost all of the tailings were milled at establishments in the "Lead-zinc ores" industry whose products were valued chiefly for the lead contained.

⁶Total value of shipments for 1954 includes the value of milling-grade ore shipped as well as the value of shipments of concentrates produced from such ores. Figures for earlier years represent production except that the value of shipments of milling-grade ore is shown for 1939. The value of concentrates produced in 1939 excludes the value of concentrates produced

than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.)

| | 1939 | | | 1929 ¹ | **** | | |
|--------------------------------------|-----------------------------|------------------------------------|--------------------------------------|-------------------------------|------------------------------------|---------------------------------------------------|----------------------|
| Lead and zinc ores industries, total | Lead ores | Zinc ores industry ² | Lead and zinc ores industries, total | Lead ores | Zinc ores industry ² | 1919 ¹ (lead and zinc ores industries) | Line no. |
| 16,317 | 6,978 | 9,339 | (NA) | (NA) | (NA) | (NA) | 1 |
| ⁴ 203 | ⁴ 143 | 460 | (NA) | (NA) | (NA) | (NA) | 2 |
| 24,023 | 7,098 | 16,925 | (NA) | (NA) | (NA) | (NA) | 3 |
| 1,961 | 675 | 1,286 | (NA) | (NA) | (NA) | (NA) | 4 |
| 62,652 | 31,467 | 31,185 | 112,428 | 67,562 | 44,866 | 75,173 | 5 |
| 9,997 | 3,050 | 6,947 | 1 | | | | 6 |
| 2,544 | 1,651 | 893 | 110,920 | 66,720 | 44,200 | 74,889 | 7 |
| 49,281 830 | 26 , 478 288 | 22,803 542 | 1,508 | 842 | 666 | 284 | 8 9 |
| 47,311 | 24,277 | 23,034 | 84,793 | 51,738 | 33,055 | 53,623 | 10 |
| 17,725 | 8,052 | 9,673 | 27,725 | 14,951 | 12,774 | 23,618 | 11 |
| 15,731 1,994 | 7,041 1,011 | 8,690 983 | 25,907 1,818 | 14,007 944 | 11,900 874 | 21,884 1,734 | 12 13 |
| 32,481 | 14,193 | 18,288 | (NA) | (NA) | (NA) | (NA) | 14 |
| 40,678 | 20,031 | 20,647 | 71,879 | 41,287 | 30,592 | 56,093 | 15 |
| 20,253 5,084 10,580 | 9,979 2,862 4,916 | 10,274 2,222 5,664 | 39,191 5,053 18,344 | 22,917 2,546 10,378 | 16,274 2,507 7,966 | 30,708 3,835 15,312 | 16 17 18 |
| (NA) 848 3,550 363 | (NA) 271 1,854 149 | (NA) 577 1,696 214 | (NA) 1,536 6,102 1,653 | (NA) 681 3,733 1,032 | (NA) 855 2,369 621 | (°) 2,783 2,592 863 | 19 20 21 22 |
| (NA) | (NA) | (NA) | (NA) | (AA) | (NA) | (NA) | 23 |
| (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | (AA) | 24 |
| - 1,117 | 487 | 630 | 3,752 | 1,904 | 1,848 | (NA) | 25 |
| 353 | 194 | 159 | 357 | 194 | 163 | 230 | 26 |
| (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | 27 |

from ore received from other establishment but includes the value added at the mill by treating such ores. Inclusion of the full value of concentrates produced from ores from other mines, on a basis comparable with 1954, would add approximately \$12,000,000 to the figures shown for 1939 for concentrates and for the total value of production. Conversely, total value of products for 1954 on a basis comparable to earlier years would amount to only about \$140,000,000. The total values shown for 1929 and 1919 exclude the value of shipments of milling-grade ores but include value of concentrates produced from such ores.

7For 1954, represents value of products shipped plus capital expenditures less cost of supplies, crude ore and old tail-

ings received for milling, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, 1929, and 1919, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "Value added," as computed for 1954, represents the value added during the year in the lead and zinc ores industries by mining and milling lead and zinc ores, producing other products, performing services for others, and in the development of lead and zinc ores properties.

The presents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

The proximately \$406,000 was specified in the 1919 census report as the "cost of ore purchased as material." However, it is not clear whether, as in 1954, this figure includes the estimated value of ores received for custom milling and of ores is not clear whether, as in 1994, this figure includes the estimated value of ores received for custom milling and of ores transferred by a company from its mines to a separately operated mill. In the 1929 and 1939 census reports, the cost of ore purchased was omitted from the 1919 totals of principal expenses and of value of products so that the 1919 figures would be comparable with those for the two subsequent census years. The 1919 figures appear in the table above in this revised form.

10 Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

¹¹ Represents total water intake from publicly and privately owned systems, and mine water used. Page 5 of 8

| | | | Northes East Nort | st and h Central | |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------|
| Line no. | Item | United States, total | Illinois | New Hampshire, Vermont, New York, New Jersey, Pennsylvania, and Wisconsin | West North Central (Missouri and Kansas) |
| 1 | Crude ore mined, total | 18,529 | 401. | 1,439 | 7,671 |
| 2 | From underground operationsdodododo | 17,808 721 | 401 | 1,439 | 7,385 286 |
| 4 | Direct-smelting ore and old tailings shippeddo | ¹ 445 | | (D) | (D) |
| 5 | Crude ore and old tailings milleddo | ² 19,941 | (D) | (D) | 8,540 |
| 6 | Lead, zinc, copper, gold, and silver concentrates shippeddodo | 1,361 | (D) | (D) | 209 |
| 7 | Value of shipments, total\$1,000 | 175,862 | 3,082 | 13,976 | 34,214 |
| 8 9 10 11 | Milling-grade oredo Direct-smelting ore and old tailingsdo Lead, zinc, copper, gold, and silver concentratesdo Other products and servicesdo | 35,816 ¹ 6,758 131,397 1,891 | (D) (D) (D) | (D) (D) 11,181 (D) | (D) 70 31,952 (D) |
| 12 | Value added in mining ³ do | 107,335 | 1,239 | 10,625 | 24,881 |
| 13 | Number of employees, total ⁴ | 15,844 | 106 | 1,414 | 3,725 |
| 14 15 | Production and development workers | 13,591 2,253 | 84 . 22 | 1,195 219 | 3,108 617 |
| 16 | Man-hours worked by production and development workers | 27,553 | 176 | 2,446 | 6,222 |
| 17 | Principal expenses, total\$1,000 | 139,987 | 2,361 | 9,837 | 23,896 |
| 18 19 20 21 22 23 24 | Wages of production and development workersdo Salaries of all other employeesdo Suppliesdo Crude ore and old tailings received for millingdo Fueldo. Purchased electric energydo Contract workdo | 53,674 12,208 24,663 35,116 1,408 6,838 6,080 | 348 147 51,712 14 140 (5) | 4,610 1,214 53,155 299 559 (5) | 12,271 3,181 4,663 96 199 2,250 1,236 |
| 25 | Purchased machinery installeddo | 5,942 | 4 | 615 | 1,754 |
| 26 | Capital expenditures (development work, construction, machinery, and equipment)do | 11,520 | 27 | 1,277 | 865 |
| 27 | For machinery and equipment onlydo | 2,959 | ••• | 559 | 124 |
| 28 | Horsepower rating of power equipment ⁶ | 753 | 8 | 54 | 191 |
| 29 | Water intake ⁷ | 22,143 | 795 | 2,201 | 5,336 |

Dwithheld to avoid approximately disclosing figures for individual companies.

1 See table 1, footnote 3. Establishments in New Jersey, Utah, and Nevada accounted for more than 90 percent of the tailings shipped to smelters.

2 See table 1, footnote 5. Establishments in Missouri accounted for more than 95 percent of the tailings milled.

3 See table 1, footnote 7.

| | So | outh | | | Mountain | | | Pac | ific | |
|---|-------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------------------|-------------------------------------------|-----------------------------------|----------------------------------------|
| | Oklahoma | Maryland, Virginia, North Carolina, Kentucky, Tennessee, Arkansas, and Texas | Idaho | Colorado | Utah | Nevada | Montana, New Mexico, and Arizona | Washington | California | Line no. |
| | 2,410 | 1,613 | 1,249 | 812 | 626 | 71 | 1,215 | 994 | 28 | 1 |
| | 2,409 1 | 1,613 | 1,248 1 | 811 1 | (D) | (D) (D) | (D) (D) | (D) | (D) | 2 3 |
| | (D) | | 8 | (D) | 105 | 18 | 20 | ••• | (D) | 4 |
| | 3,225 | 1,612 | 1,266 | 659 | 549 | (D) | 1,214 | 993 | (D) | 5 |
| | 120 | 78 | 184 | 109 | (D) | (D) | 182 | (D) | (D) | 6 |
| | 1 5,129 | 7,696 | 24,768 | 12,822 | 28,702 | 1,156 | 29,335 | 4,247 | 735 | 7 |
| | 5,098 10,031 | (D) { 6,356 (D) | 2,484 230 21,859 195 | (D) 11,400 (D) | 12,349 { 1,173 14,890 290 | (D) 890 (D) | (D) (D) | (D) 4,243 (D) | (D) (D) (D) | 8 9 10 11 |
| | 5,476 | 5,443 | 18,162 | 10,075 | 13,512 | 1,018 | 13,946 | 2,348 | 610 | 12 |
| | 1,013 | 1,298 | 2,471 | 1,245 | 1,530 | 246 | 2,409 | 298 | 89 | 13 |
| | 983 30 | 1,077 221 | 2,200 271 | 1,079 166 | 1,334 196 | 205 41 | 2,018 391 | 249 49 | 59 30 | 14 15 |
| | 2,374 | 1,942 | 4,543 | 2,217 | 2,857 | 380 | 3 , 758 | 510 | 128 | 16 |
| | 13,564 | 8,750 | 19,324 | 8,636 | 21,987 | 1,828 | 25,931 | 3,276 | 597 | 17 |
| | 3,792 130 8,926 140 539 37 | 3,155 1,042 2,034 55 397 2,067 | 9,757 1,620 4,424 2,165 128 792 438 | 4,273 779 2,832 144 488 120 | 5,543 1,187 13,858 77 774 548 | 808 259 420 39 100 202 | 7,771 2,134 14,588 260 663 515 | 1,083 343 1,047 } 143 660 | 263 172 102 46 14 | 18 19 20 21 22 23 24 |
| - | 169 | 998 | 383 | 506 | 290 | 91 | 842 | 276 | 14 | 25 |
| | 158 | 3,298 | 1,724 | 1,343 | 357 | 714 | 1,479 | 227 | 51 | 26 |
| | 121 | 318 | 251 | 318 | 286 | 90 | 747 | 131 | 14 | 27 |
| | 113 | 37 | 86 | 38 | 84 | 38 | 74 | 20 | 10 | 28 |
| | 685 | 1,332 | 2,444 | 3,843 | 2,361 | 284 | 2,053 | (D) | (D) | 29 |

⁴See table 1, footnote 8.
⁵The cost of contract work is included with the cost of supplies.
⁶See table 1, footnote 10.
⁷See table 1, footnote 11.

Table 3.--RECOVERABLE LEAD AND ZINC CONTENT OF DIRECT-SMELTING ORES AND OLD TAILINGS AND OF CONCENTRATES IN THE UNITED STATES: 1954 AND 1939

(Thousands of pounds)

| (Thousands of pounds) | | | | | | | | | | | |
|----------------------------------------------------------|----------------------------|---------------------|------------------------------|----------------|-----------------------|-----------------------|----------------------|----------------------|---------------------------------------|---------------------------------------|----------------------|
| | | | | 19541 | | | | | 193 | 39 ² | |
| | | | Lead a | nd zinc o | res indus | stries | | | | end zinc on industries | |
| Product | All mineral | | | I | Lead-zir | nc ores in | ndustry ³ | All | | | |
| | industries | Total | Lead Zinc ores ores industry | Total | Volume absorber | | industries | Total | Lead ores industry ³ | Zinc ores industry ³ | |
| | | | | | | Lead | Zine | | , | | |
| Total recoverable lead | 643,498 | 631,154 | 36,674 | | 594,480 | 477,035 | 117,445 | 803,645 | 736,959 | 603,448 | 133,511 |
| Direct-smelting ores and old tailings | 21,708 | 20,209 | 5,781 | | 14,428 | 13,485 | 943 | (NA) | 37,124 | 32,444 | 4,680 |
| Ores | 20,120 1,588 | 18,697 | (D) | | (D) | 12,525 960 | (D) | (NA) (NA) | 37,124 (NA) | 32,444 (NA) | 4,680 (NA) |
| Concentrates | 621,790 | 610,945 | 30,893 | | 580,052 | 463,550 | 116,502 | (MA) | 699,835 | 571,004 | 128,831 |
| Lead concentrates Zinc concentrates Other concentrates | 592,856 20,621 8,313 | 589,940 } 21,005 | 30,893 | | 559,047 } 21,005 | 1 | (10 505 | (NA) (NA) (NA) | (NA) (NA) (NA) | (NA) (NA) (NA) | (NA) (NA) (NA) |
| Total recoverable zinc | 900,836 | 870,248 | ••• | 144,782 | 725,466 | 181,112 | 544,354 | 1,139,798 | 1,084,560 | 134,268 | 950,292 |
| Direct-smelting ores and old tailings | 31,027 | 29,490 | ••• | (D) | (D) | (D) | 1,353 | (NA) | 4,519 | 208 | 4,311 |
| Ores Old tailings | 26,952 4,075 | (D) | ••• | (D) | 2,784 (D) | (D) 266 | (D) | (NA) (NA) | 4,519 (NA) | 208 (NA) | 4,311 (NA) |
| Concentrates | 869,809 | 840,758 | | (D) | (D) | (D) | 543,001 | (NA) | 1,080,041 | 134,060 | 945,981 |
| Zinc concentrates Lead concentrates Other concentrates | 851,408 17,432 969 | 822,727 18,031 | | 118,422 (D) | 704,305 (D) (D) | 168,279 (D) (D) | 536,026 6,975 | (AA) (AA) (AA) | (NA) (NA) (NA) | (NA) (NA) (NA) | (NA) (NA) (NA) |

MA Not available.

Distributed to avoid approximately disclosing figures for individual companies.

Figures for 1954 represent shipments for "Ones and old tailings" and production for "Goncentrates." Only the recoverable content of concentrates produced was reported for 1954. The lead content of concentrates shipped would have been about 2 million pounds more and the zinc content about 12 million pounds less than the respective production figures for 1954.

Represents production. Revised to include the recoverable lead and zinc content of concentrates produced from purchased and custom milling-grade ore, rather than the recoverable content of such ore shipped during the year.

Page 8 of 8

June 1956 Series: MI-10-4-1

SILVER ORES

The value of shipments of the silver ores industry in the United States in 1954 amounted to \$12,148 thousand of which \$11,454 thousand, or 94 percent, were in the form of concentrates. The principal expenses of the silver ores industry included \$5,599 thousand for wages and salaries, \$2,172 thousand for supplies and crude ore received for milling, \$376 thousand for fuel and purchased electric energy, and \$364 thousand for contract work. The cost of purchased machinery installed was \$446 thousand. Average employment in the industry during the year was 1,177. Capital expenditures for development work, construction, machinery, and equipment amounted to \$1,067 thousand. The total horsepower rating of power equipment available for use by the industry was 34 thousand. Water intake during the year, including mine water used, was in excess of 2 billion gallons.

There were substantial declines between 1939, the year covered by the preceding Census of Mineral Industries, and 1954 in most of the items for which comparable figures are available for the silver ores industry. The 1954 value of shipments represented a decline of 38 percent from the 1939 level. The tonnage of crude ore mined declined by 72 percent. Employment declined by 75 percent and the aggregate horsepower of power equipment by 23 percent.

Operations in the industry were reported in 11 States during 1954. The leading State, Idaho, accounted for more than nine-tenths of the total value of shipments of the industry in the United States. The next three ranking States, in order of their value of shipments, were Montana, Utah, and Nevada.

The total recoverable silver content of products of all mineral establishments, including placer operations, in the United States in 1954, was 36,678 thousand ounces, a decline of 42 percent from the 1939 level. In 1939, the silver ores industry accounted for 46 percent and, in 1954, for only 32 percent of the total recoverable silver content. Establishments in the lead and zinc ores industries accounted for 43 percent, establishments in the copper ores industry for 22 percent, and establishments in the lode gold industry for less than 2 percent of the 1954 total. Placer operations provided only 13 thousand ounces of recoverable silver. In addition, Alaska produced 33 thousand ounces of silver, mainly as a byproduct of placer gold operations. The value of imports of silver ore and base bullion into the United States during 1954 was \$40,404 thousand. These imports contained 49,008 thousand fine ounces of silver, or approximately one-third more than the total recoverable silver content of domestic mine production. The Netherlands and Canada each contributed slightly more than 20 percent of total imports into the United States. Other important sources were Peru, Mexico, Bolivia, and Honduras.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

The silver ores industry, as defined in the Standard Industrial Classification, represents establishments primarily engaged in mining, milling, or otherwise preparing silver ores, including the production of bullion at the mine or mill site. For Census purposes, the industry classification is determined by the chief aggregate value for recoverable metals contained in the ores mined or milled. Since the increase in the unit value of silver after 1939 was much less than for lead, zinc, or copper, some establishments which would have been classified as silver mines in 1939 were classified as lead, zinc, or copper mines in 1954. Conversely, since there has been no change in the unit value of gold since 1939, some establishments classified as silver mines in 1954 would have been classified as gold mines in 1939. In addition, some changes in industry classification between 1939 and 1954 resulted from changes in the composition of ore mined at specific properties. These changes in industry classification affect the comparisons between the two years referred to above.

Of the 514 thousand short tons of ore mined in this industry in the United States during 1954, more than 85 percent was obtained from underground operations. Approximately four-fifths of the total ore mined required milling.

These statistics were derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Silver Ores," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) to minimize duplication in canvassing mineral establishments. The census report form used for the silver ores industry also provided the information required by the Bureau of Mines for its annual statistics on silver ores.

Table 1.--PRINCIPAL STATISTICS FOR THE SILVER ORES INDUSTRY IN THE UNITED STATES: 1954, 1939, AND 1929

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500)

| Item | 1954 | 1939 | 1929 ¹ |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------------------|----------------------------|
| Crude ore mined | 514 | 1,826 | (NA) |
| Direct-smelting ore and old tailings shippeddo | 98 | ² 735 | (NA) |
| Crude ore and old tailings milleddo | 410 | 1,102 | (NA) |
| Silver, gold, copper, lead, and zinc concentrates produceddo | 21 | 51 | (NA) |
| Value of shipments, total ³ \$1,000 | 12,148 | 19,716 | 8,457 |
| Milling-grade ore | 97 584 11,454 | 1,576 8,415 8,191 1,442 92 | 8,437 |
| Value added in mining ⁴ do | 9,857 | 16,340 | 5,891 |
| Number of employees, total ⁵ | 1,177 | 4,627 | 2,813 |
| Production and development workers | 1,065 112 | 4 , 256 371 | 2,593 220 |
| Man-hours worked by production and development workers1,000 | 2,214 | 9,056 | (NA) |
| Principal expenses, total\$1,000 | 8,511 | 10,295 | 7,500 |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies and crude ore and old tailings received | 5,003 596 | 6,017 902 | 4,327 607 |
| for milling ⁶ do. Fueldo. Purchased electric energydo. Contract workdo. | 2,172 105 271 364 | 2,504 178 574 120 | 1,821 122 485 138 |
| Purchased machinery installeddo | 446 | (NA) | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment) | 1,067 | (NA) 398 | (NA) |
| Horsepower rating of power equipment 1,000 | 34 | 390 | 29 |
| Water intake ⁸ | 2,290 | (NA) | (NA) |
| water intake garrons garrons | 2,290 | (INA) | (NA) |

NA Not available.

¹Excludes nonproducing operations. In 1929, statistics for nonproducing operations are available only for the copper, lead, zinc, gold, and silver ores industries as a group. For this year, employment and principal expenses of nonproducing operations for this group of industries were about 5 percent of the comparable figures for producing operations.

²Represents production of direct-smelting ore only, ³Total value of shipments for 1954 includes the value of milling-grade ore shipped as well as the value of shipments of concentrates produced from such ores. Figures for earlier years represent production except that value of shipments of milling-grade ore is shown for 1939. The value of concentrates produced in 1939 excludes the value of concentrates produced from ores received from other establishments, but includes the value added at the mill by treating such ores. Inclusion of the full value of concentrates produced from ores from other mines, on a basis comparable with 1954, would add approximately \$475,000 to the figures shown for 1939 for concentrates and for the total value of production. The total value shown for

¹⁹²⁹ excludes the value of shipments of milling-grade ores but includes the value of concentrates from such ores.

4For 1954, represents value of products shipped plus capital expenditures less cost of supplies, crude ore and old tailings received for milling, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939 and 1929, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "Value added," as computed for 1954, represents the value added during the year in the silver ores industry by mining and milling silver ores, producing other products, performing services for others, and in development of silver ores properties.

5Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

The cost of crude ore and old tailings received in 1954 for milling represents only a fraction of one percent of the combined figure. Data for the cost of ore and tailings received for milling are excluded for 1929 and 1939.

⁷Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy. ⁸Represents total water intake from publicly and privately owned systems, and mine water used.

| Item | United States, total | Idaho | Other States (Texas, Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, and California) |
|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------|
| Crude ore mined | 514 | 380 | 134 |
| Direct-smelting ore and old tailings shippeddo | 98 | 8 | 90 |
| Crude ore and old tailings milleddodo | 410 | 372 | 38 |
| Silver, gold, copper, lead, and zinc concentrates shippeddo | 21 | 18 | 3 |
| Value of shipments, total\$1,000 | 12,148 | 11,089 | 1,059 |
| Milling-grade oredo Direct-smelting ore and old tailingsdo Silver, gold, copper, lead, and zinc concentratesdo Other products and servicesdo | 97 584 11,454 13 | (D) 10,999 (D) | 97 (D) 455 (D) |
| Value added in mining1do | 9,857 | 8,816 | 1,041 |
| Number of employees, total ² | 1,177 | 982 | 195 |
| Production and development workers | 1;065 112 | 897 85 | 168 27 |
| Man-hours worked by production and development workers1,000 | 2,214 | 1,864 | 350 |
| Principal expenses, total\$1,000 | 8,511 | 7,293 | 1,218 |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies and crude ore and old tailings received | 5,003 596 | 4,416 522 | 587 74 |
| for milling. do Fuel. do Purchased electric energy. do Contract work. do | 2,172 105 271 364 | 1,955 58 239 103 | 217 47 32 261 |
| Purchased machinery installeddo | 446 | 350 | 96 |
| Capital expenditures (development work, construction, machinery, and equipment)do | 1,067 | 432 | 635 |
| For machinery and equipment onlydo | 315 | 237 | 78 |
| Horsepower rating of power equipment ³ | 34 | 19 | 15 |
| Water intake ⁴ ,000,000 gallons | 2,290 | 2,152 | 138 |

DWithheld to avoid approximately disclosing figures for individual companies.

Table 3.--RECOVERABLE SILVER CONTENT OF PRODUCTS OF ALL MINERAL INDUSTRIES IN THE UNITED STATES: 1954 AND 1939

(Thousands of fine ounces) 1939² 19541 Product All mineral Silver ores All mineral Silver ores industries industry industries industry TOTAL RECOVERABLE SILVER..... 36,678 11,881 62,822 28,989 From lode deposits, total..... 11,881 28,989 36,665 62,725 12,714 677 (NA) Direct-smelting ore and old tailings..... 5,154 4,984 12,714 (D) (NA) (NA) Old tailings..... 170 (D) (NA) 31,208 11,204 (NA) 14,314 Concentrates..... (NA) (NA) (D) (NA Silver concentrates..... 11,174 Other concentrates..... 20,034 (NA) Mill bullion and precipitates..... 303 (NA) 1,961 Recovered by amalgamation..... 94 (NA) 209 (NA) 1,961 Recovered by cyanidation..... 13 97 From placer gravels.....

¹See table 1, footnote 4.

²See table 1, footnote 5.

³See table 1, footnote 7. ⁴See table 1, footnote 8.

DWithheld to avoid approximately disclosing figures of individual companies. NA_{Not} available.

¹Figures for 1954 represent shipments, except for concentrates for which only the recoverable content of production was

reported. However, the tonnage of concentrates shipped exceeded the tonnage produced by less than 0.1 percent.

2Represents production. Revised to include the recoverable silver content of concentrates produced from purchased and custom milling-grade ore, rather than the recoverable content of such ore shipped during the year.

May 1956

Series:

MI-10-4-2

LODE GOLD

The value of shipments of the lode gold industry in the United States in 1954 amounted to \$28,513 thousand of which \$24,696 thousand, or more than 85 percent, were in the form of gold mill bullion and precipitates. The principal expenses of the lode gold industry included \$12,268 thousand for wages and salaries, \$5,016 thousand for supplies, \$1,274 thousand for crude ore received for milling, \$1,289 thousand for fuel and purchased electric energy, and \$320 thousand for contract work. The cost of purchased machinery installed was \$910 thousand. Average employment in the industry during the year was 3,019. Capital expenditures for development work, construction, machinery, and equipment amounted to \$2,177 thousand. The total horsepower rating of power equipment available for use by the industry was 111 thousand. Water intake during the year, including mine water used, was about 4 billion gallons.

There were substantial declines between 1939, the year covered by the preceding Census of Mineral Industries, and 1954 in all items for which comparable figures are available. The 1954 value of shipments represented a decline of 67 percent from the 1939 level. The tonnage of crude ore mined declined by 80 percent. Employment declined by 84 percent, and the aggregate horsepower of power equipment by 62 percent.

In 1954, operations in the industry were reported in 14 States. The leading State was South Dakota, accounting for about two-thirds of the total value of shipments of the industry in the United States. The next four ranking States, in order of their value of shipments, were California, Colorado, Washington, and Nevada.

During 1954, the total recoverable gold content of products of all mineral establishments in the United States, including placer operations, was 1,586 thousand fine ounces, a decline of almost 60 percent from the 1939 level. In 1939, nearly two-thirds of the total recoverable gold content was accounted for by establishments in the lode gold industry, but in 1954 that industry accounted for slightly less than half of all recoverable gold produced. Establishments in the copper ores industry accounted for a third of the 1954 total, and placer operations for slightly more than 10 percent. Operations in Alaska, nearly all placer, provided an additional 248 thousand fine ounces, raising the 1954 total to approximately 1,834 thousand ounces. The value of imports of gold ore and base bullion into the United States during 1954 was \$28,721 thousand. Such imports contained 823 thousand fine ounces of gold, or approximately 45 percent as much as the total mine production of the United States and Alaska combined. More than a third of the imports came from Canada. Other important sources were the Republic of the Philippines, Mexico, Nicaragua, and Peru.

The lode gold industry, as defined by the Standard Industrial Classification, represents establishments primarily engaged in mining gold ores from lode deposits. In addition to ore dressing methods, such as crushing, grinding, gravity concentration, and froth flotation, the lode gold industry includes amalgamation, cyanidation, and the production of bullion at the mine or mill site. For Census purposes, the industry classification is determined by the chief aggregate value for recoverable metals contained in the ores mined or milled. Since the unit market value of gold has not changed since 1939, whereas the unit values of most other metals have increased substantially, a number of establishments which were classified in 1939 as gold mines are classed for 1954 as lead ore, zinc ore, or other types of nonferrous metal mines. This change in industry classification accounts for a part of the decline in the lode gold industry from 1939 referred to above. Of the 2,247 short tons of crude ore mined in this industry in the United States in 1954, approximately 90 percent was obtained from underground operations. Nearly all of this ore required milling, with only three percent of the total classified as direct-smelting ore.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Gold," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) to minimize duplication in canvassing mineral establishments. The census report form used for the lode gold industry also provided the information required by the Bureau of Mines for its annual statistics on lode gold operations.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

Table 1 .-- PRINCIPAL STATISTICS FOR THE LODE GOLD INDUSTRY IN THE UNITED STATES: 1954, 1939, AND 1929

(Excludes establishments for 1954 with value or production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500.)

| Item | 1954 | 1939 | 19291 |
|-----------------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------|
| Crude ore mined | 2,247 | 11,342 | (NA) |
| Direct-smelting ore and old tailings shippeddo | 67 | ² 504 | (NA) |
| Crude ore and old tailings milleddodo | 2,398 | 11,406 | (NA) |
| Gold, silver, copper, lead, and zinc concentrates produceddo | 4 | 154 | (NA) |
| Value of shipments, total ³ \$1,000 | 28,513 | 86,063 | 17,650 |
| Milling-grade ore | 1,625 756 1,425 24,696 | 6,878 6,352 14,268 58,309 256 | 17,631 |
| Value added in mining ⁴ do | 21,881 | 66,522 | 11,713 |
| Number of employees, total ⁵ | 3,019 | 19,254 | 5,796 |
| Production and development workers | 2,633 386 | 17,591 1,663 | 5,353 443 |
| Man-hours worked by production and development workers1,000 | 5,897 | 41,522 | (NA) |
| Principal expenses, total\$1,000 | 20,167 | 50,917 | 15,724 |
| Wages of production and development workers | 10,405 1,863 5,016 1,274 569 720 320 | 27,305 4,071 13,757 (NA) 1,417 3,348 1,019 | 8,656 1,131 4,112 (NA) 436 833 556 |
| Purchased machinery installeddo | 910 | (NA) | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 2,177 | (NA) | (NA) |
| For machinery and equipment onlydo | 568 | 3,804 | 1,085 |
| Horsepower rating of power equipment ⁶ | 111 | 291 | 70 |
| Water intake ⁷ ,000,000 gallons | 4,280 | (NA) | (NA) |

¹Excludes nonproducing operations. For 1929, statistics for nonproducing operations are available only for the copper, lead, zinc, gold, and silver ores industries as a group. For that year, employment and principal expenses of nonproducing operations for this group of industries were about five percent of the comparable figures for producing operations.

²Represents production of direct-smelting ore only. Total value of shipments for 1954 includes the value of milling-grade ores shipped as well as the value of shipments of concentrates produced from such ores. Figures for earlier years represent value of production, except the value of shipments of milling-grade ores is included for 1939. The values of concentrates and of mill bullion and precipitates produced in 1939 exclude the values of concentrates and of mill bullion and precipitates produced from ores and old tailings received from other establishments but include the value added at the mill by treating such ores and old tailings. An available consolidated figure for value added in processing purchased and custom ores and tailings was allocated between "concentrates" and "mill bullion and precipitates" on the basis of the values of the recoverable metals contained in such ores and tailings. Inclusion of the value of concentrates and mill bullion and precipitates produced from purchased and custom ores and tailings, on a basis comparable with 1954, would add approximately \$200,000 to the value of concentrates and \$6,700,000 to the value of mill bullion and precipitates, or \$6,900,000 to the total value of production in 1939.

For 1954, represents value of products shipped plus capital expenditures less cost of supplies, crude ore and old The 1924, represents value of products shipped plus capital expenditures less cost of supplies, crude ore and old tailings received for milling, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939 and 1929, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "Value added," as computed for 1954, represents the value added during the year in the lode gold industry by mining and milling gold ores, producing other products, performing services for others, and in development of lode gold properties.

*Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

*Grepresents the horsepower of all prime movers, plus the horsepower of electric motors driven by purchased energy.

*TREPRESENTS total water intake from publicly and privately owned systems, and mine water used.

| | | | Othe | r States |
|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------|
| Item | United States, total | Pacific (Washington, Oregon, and California) | Colorado | South Dakota, North Carolina, Georgia, Montana, Idaho, Wyoming, New Mexico, Arizona, Utah, and Nevada |
| Crude ore mined | 2,247 | 304 | 157 | 1,786 |
| Crude ore and old tailings milleddo | 2,398 | (D) | (D) | 1,804 |
| Value of shipments, total\$1,000 | 28,513 | 5,047 | 3,221 | 20,245 |
| Milling-grade ore | 1,625 756 1,425 24,696 11 | 160 (D) 1,344 (D) (D) | (D) (D) 25 (D) | (D) 250 56 19,925 (D) |
| Value added in mining1do | 21,881 | 3,675 | 1,764 | 16,442 |
| Number of employees, total ² | 3,019 | 719 | 311 | 1,989 |
| Production and development workers | 2,633 386 | 627 92 | 267 44 | 1,739 250 |
| Man-hours worked by production and development workers1,000 | 5,897 | 1,440 | 612 | 3,845 |
| Principal expenses, total\$1,000 | 20,167 | 4,482 | 2,750 | 12,935 |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies and crude ore and old tailings received | 10,405 1,863 | 2,435 490 | 894 118 | 7,076 1,255 |
| for milling | 6,290 569 720 320 | 1,028 82 357 90 | 1,374 27 212 125 | 3,888 460 151 105 |
| Purchased machinery installeddo | 910 | 257 | 122 | 531 |
| Capital expenditures (development, construction, machinery, and equipment)do | 2,177 | 442 | 403 | 1,332 |
| For machinery and equipment onlydo | 568 | 178 | 116 | 274 |
| Horsepower rating of power equipment ³ | 111 | 41 | 15 | 55 |
| :Water intake4 | 4,280 | 1,204 | 182 | 2,894 |

DWithheld to avoid approximately disclosing figures for individual companies.

1 See Table 1, footnote 4.

2 See Table 1, footnote 5.

3 See Table 1, footnote 6.

4 See Table 1, footnote 7.

Table 3.--RECOVERABLE GOLD CONTENT OF PRODUCTS OF ALL MINERAL INDUSTRIES IN THE UNITED STATES: 1954 AND 1939; AND IN THE UNITED STATES AND ALASKA: 1954

(Thousands of fine ounces)

| (Inducated of Time outcom) | | | | | | | |
|---------------------------------------|---------------------------------|------------------------|--------------------|------------------------|--------------------|--|--|
| | United States | | Unite | d States | | | |
| Product | and Alaska 1954 ¹ | 19 | 954 ¹ | | 1939 ² | | |
| | (all mineral industries) | All mineral industries | Lode gold industry | All mineral industries | Lode gold industry | | |
| TOTAL RECOVERABLE GOLD | 1,833.6 | 1,585.7 | 766.5 | 3,872.8 | 2,448.5 | | |
| From lode deposits, total | 1,415.3 | 1,414.5 | 766.5 | ³ 3,048.2 | 2,448.5 | | |
| Direct-smelting ores and old tailings | 83.8 | 83.8 | 28.5 | (NA) | 220.3 | | |
| Ores Old tailings | 81.5 2.3 | 81.5 2.3 | 28.0 0.5 | (NA) (NA) | 220.3 (NA) | | |
| Concentrates | 617.4 | 617.4 | 36.6 | (NA) | 417.1 | | |
| Gold concentrates | 37.6 579.8 | 37.6 579.8 | (D) (D) | (NA) (NA) | (NA) (NA) | | |
| Mill bullion and precipitates | 714.1 | 713.3 | 701.4 | (NA) | 1,811.1 | | |
| Recovered by amalgamation | 426.4 287.7 | 425.6 287.7 | 416.1 285.3 | (NA) (NA) | (NA) (NA) | | |
| From placer gravels | 418.3 | 171.2 | (Z) | ³ 824.6 | | | |

DWithheld to avoid approximately disclosing figures of individual companies. ZLess than 0.05

Less than 0.05

1 Figures for 1954 represent shipments, except for concentrates for which only the recoverable content of production was reported. However, the tonnage of concentrates produced exceeded the tonnage shipped by less than 0.5 percent.

2 Represents production. Revised to include the recoverable gold content of concentrates produced from purchased and custom milling-grade ore, rather than the recoverable content of such milling-grade ore shipped during the year.

3 The figure for "lode deposits" may contain small amounts of gold recovered from placer gravels in industries other than "lode gold" and "placer gold." Separate figures for such operations are not available. The figure for "placer gravels" represents a revised figure for the "placer gold" industry only.

November 1955 Series: MI-10-4-3

PLACER GOLD

During 1954 the value of shipments by the placer gold industry in the United States and Alaska amounted to \$14,501 thousand, of which shipments in Alaska alone were \$8,642 thousand, or about 60 percent of the combined total. Shipments of gold from these placer operations amounted to 415 thousand fine ounces, valued at \$14,459 thousand. Silver accounted for almost all of the remaining shipments. The principal expenses of the placer gold industry in the United States and Alaska included \$6,673 thousand for wages and salaries, \$2,943 thousand for supplies, \$2,057 thousand for fuel and purchased electric energy, and \$96 thousand for contract work. The cost of purchased machinery installed was \$578 thousand. Employment in the industry averaged 1,301 for the year. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$1,240 thousand. The total horsepower of equipment available for use by the industry was 145 thousand. Water intake during the year, including mine water used, was 46 billion gallons.

Comparative industry statistics for earlier years are available only for the United States. The 1954 shipments of gold by the placer gold industry, excluding shipments in Alaska, were 168 thousand fine ounces, representing a decline of nearly 80 percent from 1939, the year covered by the preceding Census of Mineral Industries. Employment in the industry in the United States dropped from 3,705 in 1939 to 531 in 1954, a decline of over 85 percent. The horsepower of power equipment dropped between 1939 and 1954 by about 45 percent. In 1954, placer gold was produced in 10 States, with about 80 percent coming from California, about 10 percent from Nevada, and nearly 4 percent from Idaho.

The placer gold industry represents establishments primarily engaged in the recovery of gold from placer deposits by such methods as dredging, hydraulicking, sluicing, and drift mining. This definition is in accordance with the Standard Industrial Classification of the Bureau of the Budget (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949).

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Gold," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases will be issued for other industries within the next few months.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) to minimize duplication in canvassing mineral establishments. The census report form used for the placer gold industry also provided the information required by the Bureau of Mines for its annual statistics on placer gold operations.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.)

| Item | 1954 | 1939 | 1929 | 1919 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------|------------------------------------|---------------------------------------------|
| Quantity of shipments Gold | 168 12 | ¹ 825 ¹ 97 | (NA) (AA) | ¹ 464 ¹ 45 |
| Value of shipments, total\$1,000 | 5,859 | ¹ 28,027 | ¹ 3,779 | ¹ 9,369 |
| Golddosilver, other products, and servicesdo | 5,845 14 | (NA) (NA) | 3,770 9 | (NA) (NA) |
| Value added in mining ² do | 3,508 | 21,933 | 2,582 | 5,847 |
| Number of employees, total ³ | 531 | 3,705 | 668 | 1,529 |
| Production and development workers | 482 49 | 3 , 228 477 | 578 90 | 1,380 149 |
| Man-hours worked by production and development workers1,000 | 1,226 | 8,088 | (NA) | (NA) |
| Principal expenses, total\$1,000 | 4,764 | 12,887 | 2,427 | 5,873 |
| Wages of production and development workers .do Salaries of all other employees .do Supplies .do Fuel .do Purchased electric energy .do Contract work .do | 1,963 293 1,553 245 657 53 | 5,631 1,162 3,780 699 1,473 | 970 260 590 1 604 2 | 1,914 437 2,245 20 1,124 133 |
| Purchased machinery installeddo | 242 | (NA) | (NA) | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 399 | (NA) | (na) | (NA) |
| For machinery and equipment onlydo | 212 | 3,790 | 359 | (NA) |
| Horsepower rating of power equipment4 | 61 | 110 | 20 | 36 |
| Water intake ⁵ 1,000,000 gallons | 10,852 | (NA) | (NA) | (NA) |

NA Not available.

Represents total water intake from publicly and privately owned systems and mine water used.

[&]quot;Not available.

Represents production.

For 1954, represents value of products shipped plus capital expenditures less cost of supplies, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, 1929, and 1919 represents value of products less cost of supplies, fuel, purchased electric energy, and contract work.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

Pharmaceuts total water intake from me movers plus the horsepower and mine water used.

Table 2.--PRINCIPAL STATISTICS FOR THE PLACER GOLD INDUSTRY IN THE UNITED STATES AND ALASKA: 1954

| | 1 | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-------------------------------------------|------------------------------------|
| I tem | United States and Alaska, total | United States | Alaska |
| Quantity of shipments | | | |
| Gold | 4 15 44 | 168 12 | 247 32 |
| Value of shipments, total\$1,000 | 14,501 | 5,859 | 8,642 |
| Golddo | 14,459 42 | 5,845 14 | 8,614 28 |
| Value added in mining1do | 10,067 | 3,508 | 6,559 |
| Number of employees, total ² | 1,301 | 531 | 770 |
| Production and development workers | 1,146 155 | 482 49 | 664 106 |
| Man-hours worked by production and development workers | 2,965 | 1,226 | 1,739 |
| Principal expenses, total\$1,000 | 11,769 | 4,764 | 7,005 |
| Wages of production and development workers .do Salaries of all other employees .do Supplies .do Fuel .do Purchased electric energy .do Contract work .do | 5,612 1,061 2,943 1,400 657 96 | 1,963 293 1,553 245 657 53 | 3,649 768 1,390 1,155 |
| Purchased machinery installeddo | 578 | 242 | 336 |
| Capital expenditures (development work, construction, machinery, and equipment)do | 1,240 | 399 | 841 |
| For machinery and equipment onlydo | 752 | 212 | 540 |
| Horsepower rating of power equipment ³ | 145 | 61 | 84 |
| Water intake ⁴ 1,000,000 gallons | 46,436 | 10,852 | 35,584 |

DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS WASHINGTON 25, D. C.

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOI PAYMENT OF POSTAGE, \$300

September 1955 Series: MI-10-5

BAUXITE

Shipments of bauxite to alumina plants and to other consumers in 1954 amounted to 1,766 thousand tons (dried bauxite equivalent), valued at \$15,937 thousand. In addition, establishments in the bauxite industry shipped crude and dried bauxite to separate bauxite processing plants, and also shipped other products and performed services, amounting to \$935 thousand. The principal expenses of establishments primarily engaged in producing bauxite included \$3,580 thousand for wages and salaries, \$804 thousand for supplies, \$1,223 thousand for bauxite received for preparation, \$373 thousand for fuel and electric energy, and \$1,611 thousand for contract work. The cost of purchased machinery installed was \$338 thousand. Employment in these establishments averaged 852 for the year. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$306 thousand. The total horsepower of equipment available for use by these establishments was 48 thousand. (See reverse for detailed statistics.)

The 1954 shipments of bauxite to consumers represented almost a fivefold increase since 1939, the year covered by the preceding Census of Mineral Industries. Employment in the bauxite industry rose only slightly between 1939 and 1954, but horsepower of power equipment increased almost fourfold. In 1954, about 98 percent of all bauxite was mined in Arkansas, and the balance in Alabama and Georgia. Imports of bauxite in 1954 were more than double the domestic production of 2,352 thousand tons. These imports, amounting to approximately 5,392 thousand tons, came primarily from Surinam and Jamaica.

The bauxite and other aluminum ores industry represents establishments primarily engaged in mining, drying, calcining, activating, sintering, or otherwise preparing bauxite and other aluminum ores. This definition is in accordance with the Standard Industrial Classification of the Bureau of the Budget (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949.) In 1954, bauxite was the only aluminum ore produced. Approximately four-fifths of the crude bauxite mined in 1954 was shipped without further processing to alumina plants and other consumers. Of the shipments of processed bauxite to consumers, about three-fourths (on a dried bauxite equivalent basis) was dried and the balance calcined or activated.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Bauxite," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases will be issued for other industries within the next few months.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) in order to minimize duplication in canvassing mineral establishments. The census report form used for the bauxite industry also provided the information required by the Bureau of Mines for its annual statistics on bauxite.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

PRINCIPAL STATISTICS FOR THE BAUXITE INDUSTRY IN THE UNITED STATES: 1954, 1939, 1929, AND 1919

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.)

| Item | 1954 | 1939 | 1929 | 1919 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------|
| Crude bauxite mined | 2,352 | 450 | 365 | (NA) |
| Shipments of bauxite to consumers (dried bauxite equivalent)1dodo | 1,766 | 388 | (NA) | (NA) |
| Value of shipments, total\$1,000 | 16,872 | ² 2,527 | ² 2,239 | ² 2,190 |
| Crude and processed bauxite shipped to consumersdo | 15,937 | (NA) | (NA) | (NA) |
| Crude and dried bauxite shipped to processing plants and other products and servicesdo | 935 | (NA) | (NA) | (NA) |
| Value added in mineral production ³ do | 12,829 | 1 ,9 65 | 1,781 | 1,748 |
| Number of employees, total ⁴ | 852 | 827 | 689 | 804 |
| Production and development workers | 662 190 | 727 100 | 602 87 | 738 66 |
| Man-hours worked by production and development workers1,000 | 1,290 | 1,176 | (NA) | (NA) |
| Principal expenses, total\$1,000 | 7,591 | ⁵ 1,3 8 1 | ⁵ 1,248 | ⁵ 1,541 |
| Wages of production and development workersdo Salaries of all other employeesdo Suppliesdo Bauxite received for preparationdo Fueldo Purchased electric energydo Contract workdo | 2,530 1,050 804 1,223 239 134 1,611 | 578 241 269 (NA) 187 60 46 | 513 277 216 (NA) 122 38 82 | 942 157 304 (NA) 138 |
| Purchased machinery installeddo | 338 | (NA) | (NA) | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment) | 306 275 | (NA) 180 | (NA) 96 | · (NA) (NA) |
| Horsepower rating of power equipment ⁶ 1,000 | 48 | 13 | 6 | 3 |

NA Not available.

represents prepared bauxite produced and crude bauxite mined but not processed.

Represents value of products; excludes the value of crude and dried bauxite further processed in the bauxite industry

¹For 1954, represents crude and prepared (dried, calcined, and activated) bauxite shipped to alumina plants and other consumers; excludes crude and dried bauxite shipped to processing plants for drying, calcining, or activating. For 1939,

^{*}Represents value of products; excludes the value of contract of class during the year.

For 1954, represents value of products shipped plus capital expenditures less cost of supplies, bauxite received for preparation, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work.

Appresents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Excludes the cost of bauxite received from other establishments for preparation.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

June 1956 Series: MI-10-6-1

TUNGSTEN ORES

The value of shipments of the tungsten ores industry in the United States in 1954 amounted to \$60,737 thousand of which \$55,251 thousand, or approximately 90 percent, represented shipments of concentrates. The principal expenses of the tungsten ores industry included \$14,758 thousand for wages and salaries, \$8,293 thousand for supplies, \$10,891 thousand for crude ore, old tailings, and concentrates received for treatment, \$1,686 thousand for fuel and purchased electric energy, and \$1,885 thousand for contract work. The cost of purchased machinery installed was \$3,562 thousand. Average employment in the industry during the year was 2,987. Capital expenditures for development work, construction, machinery, and equipment amounted to \$6,326 thousand. The total horsepower rating of power equipment available for use by the industry was 157 thousand. Water intake during the year, including mine water used, was in excess of 3 billion gallons.

It is estimated that during 1954 the tungsten ores industry shipped high-grade concentrates valued at \$49 million and containing approximately 791 thousand short-ton units of tungsten trioxide (WO₃). The estimated units of WO₃ contained in the latter shipments were over 4 times the number of units contained in the concentrates and direct-shipping ore produced in 1939, the year covered by the preceding Census of Mineral Industries. The tonnage of crude tungsten ore mined in 1954 was five times the amount of ore mined in 1939. Employment in the tungsten ores industry increased almost fourfold between 1939 and 1954, and the aggregate horsepower of power equipment increased tenfold.

Operations in the tungsten ores industry were reported in 10 States in 1954. The leading State was Nevada, accounting for about one-third of the total value of shipments of the industry in the United States. The aggregate value of shipments of establishments located in California accounted for nearly another one-third of the total. The next largest producing States were North Carolina and Utah. Small-scale tungsten ores operations were reported in Alaska, but there were no shipments.

During 1954, in addition to the shipments of high-grade concentrates by establishments in the tungsten ores industry, there were shipments of byproduct tungsten concentrates, principally of high-grade, by establishments in other mineral industries. The latter shipments were valued at approximately \$2.5 million and contained about 43 thousand units of WO3. Total 1954 shipments, therefore, of high-grade concentrates, by establishments in all mineral industries, are estimated to be valued at almost \$52 million and to contain nearly 834 thousand units of WO3. The value of imports for consumption of tungsten ores and concentrates during 1954 was \$76 million. Such imports contained 24,188 thousand pounds of tungsten, or the equivalent of 1,525 thousand units of WO3 (almost twice as much tungsten as was contained in the total shipments of high-grade concentrates from domestic production). The leading sources of imports were Bolivia and the Korean Republic, each of which provided more than a fifth of the value of imports into the United States. Other important sources were Spain, Portugal, and Australia.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

The tungsten ores industry, as defined by the Standard Industrial Classification, represents establishments engaged in mining, milling, or otherwise preparing tungsten ores, such as scheelite, wolframite, ferberite, and hubnerite. Major milling methods used are flotation, straight gravity, and a combination of gravity and flotation, although a considerable number of small operations use simple methods of beneficiation, such as sluice boxes and hand sorting. Of the 1,938 thousand short tons of crude ore mined in this industry in the United States in 1954, approximately three-quarters was obtained from underground operations. All ore mined required treatment. While most of the ore mined was treated at the establishment where mined, considerable quantities were either sold to other establishments and treated there or sent to custom plants. Included in the material shipped to other establishments for treatment were low-grade concentrates requiring upgrading to meet the specifications of the General Services Administration, which buys practically all of the tungsten concentrates produced from domestic ores.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Ferro-Alloy Ores, Except Vanadium," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) to minimize duplication in canvassing mineral establishments. The census report form used for the tungsten ores industry also provided the information required by the Bureau of Mines for its annual statistics on tungsten ores.

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500.)

| Item | 1954 | 1939 | 1929 ¹ |
|---------------------------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------|-------------------------------------------|
| Crude ore mined ² | 1,938 993 | 394 (NA) | (NA) (NA) |
| Crude ore, tailings, and concentrates treated | ³ 2,056 ³ 1,136 | 382 (NA) | (NA) (NA) |
| Concentrates shipped ⁴ | 24 , 939 916 | 3,106 188 | (NA) (NA) |
| Value of shipments, total ⁴ \$1,000 | 60,737 | 3,354 | 734 |
| Milling-grade oredo Tailingsdo Concentratesdo Other products and servicesdo | 4,880 91 55,251 515 | 4126 3,139 89 | { } 734 |
| Value added in mining ⁵ do | 40,746 | 2,427 | 540 |
| Number of employees, total ⁶ | | 844 | 217 |
| Production and development workers | | 701 143 | 186 31 |
| Man-hours worked by production and development workers,000 | 6,327 | 1,639 | (NA) |
| Principal expenses, total\$1,000 | 37,513 | 2,295 | 552 |
| Wages of production and development workers | 13,148 1,610 8,293 10,891 933 753 1,885 | 1,114 254 659 (NA) 99 114 55 | 297 61 127 (NA) 10 53 4 |
| Purchased machinery installeddo | 3,562 | (NA) | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment) | 6,326 | (NA) | (NA) |
| For machinery and equipment onlydo | 1 | 308 | 14 |
| Horsepower rating of power equipment ⁷ 1,000 | 157 | 15 | 3 |
| Water intake ⁸ ,000,000 gallons | 3,380 | (NA) | (NA) |

NA Not available.

¹Excludes data for nonproducing tungsten ores operations.

²Includes dump ore, tailings, and surface float.

³These statistics include some duplication since the low-grade concentrates treated are mostly beneficiated from crude

ore and tailings already included in the figures shown.

⁴Figures for 1939 and 1929 represent production. Statistics for concentrates shipped in 1954 contain some duplication since they include low-grade concentrates shipped to upgrading plants in addition to the high-grade concentrates shipped to the General Services Administration. The total value of shipments for 1954 includes further duplication due to the inclusion of the value of milling-grade ores and tailings shipped in addition to the value of shipments of concentrates produced from such ores and tailings. For 1939, the value figure shown for ore and tailings includes \$92 thousand for the value of material then classified as direct-shipping ore and about \$34 thousand for the value of material mined but not treated during 1939. It is estimated that shipments of high-grade concentrates during 1954 by the tungsten ores industry were valued at \$49 million and contained about 791 thousand units of WO3. These estimates were derived by subtracting from the total shipments of the industry the cost of, and number of WO3 units contained in, the ores, tailings, and low-grade concentrates received for treatment at tungsten mills. In addition, byproduct tungsten concentrates, principally of high-grade, reported shipped by establishments in other mineral industries, were valued at approximately \$2.5 million and contained nearly 43 thousand units of WO3. In 1939, the units of WO3 contained in the direct-shipping ore and concentrates produced amounted to 193 thousand, of which 98 percent were contained in the concentrates.

Fror 1954, represents value of products shipped plus capital expenditures less cost of supplies and crude ore, tailings, and concentrates received for treatment, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939 and 1929, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "Value added," as computed for 1954, represents the value added during the year in the tungsten ores industry by mining and treating tungsten ores, producing other products, performing services for others, and in development of tungsten ores properties.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

Represents total water intake from publicly and privately owned systems and mine water used.

| | | INDUSTRIT, | Mountain | | | | |
|--------------------------------------------------------------------------------------------|------------------------------|------------------------------------------|------------------|----------------|-----------------------|--------------------------------------------------|----------------------------------------------|
| Item | United States, total | South Atlantic (North Carolina) | Montana | Colorado | Nevada | Idaho, New Mexico, Arizona, and Utah | Pacific (Washington and California) |
| Crude ore mined, total1,000 short tons | 1,938 | 289 | 133 | 66 | 823 | 109 | 518 |
| From underground operationsdo | 1,408 530 | 289 | 14 119 | 13 53 | 659 164 | 74 35 | 359 159 |
| Units of WO3 contained1,000 | 993 | 174 | 59 | 26 | 413 | 55 | 266 |
| Crude ore, tailings, and concentrates treated,000 short tons | 2,056 | 288 | 227 | 44 | 818 | 140 | 539 |
| Units of WO3 contained | 1,136 | 173 | 60 | 31 | 390 | 148 | 334 |
| Concentrates shippedShort tons | 24,939 | 3,065 | 4,392 | 505 | 10,461 | 2,397 | 4,119 |
| Units of WO3 contained | 916 | 152 | 42 | 22 | 308 | 117 | 275 |
| Value of shipments, total | 60,737 | 9,595 | 2,237 | 1,918 | 20,375 | 7,480 | ²19,132 |
| Milling-grade oredo Tailingsdo Concentratesdo Other products and servicesdo | 4,880 91 55,251 515 | 9,595 | 2,202 | } 697 1,221 | 2,399 17,897 79 | { 167 7,194 119 |] 1,673 17,142 317 |
| Value added in mining ³ \$1,000 | 40,746 | 8,906 | 1,857 | 1,122 | 15,494 | 3,141 | 10,226 |
| Number of employees, total4 | 2,987 | 517 | 73 | 112 | 1,123 | 309 | 853 |
| Production and development workers | 2,635 352 | 501 16 | 61 12 | 99 13 | 1,024 99 | 270 39 | 680 173 |
| Man-hours worked by production and development workers | 6,327 | 1,193 | 148 | 202 | 2,528 | 610 | 1,646 |
| Principal expenses, total\$1,000 | 37,513 | 2,925 | 844 | 1,352 | 12,200 | 6,258 | 13,934 |
| Wages of production and development workersdo Salaries of all other employeesdo Suppliesdo | 13,148 1,610 8,293 | 2,096 121 482 | 305 69 232 | 360 46 | 5,432 563 2,830 | 1,158 | 3,797 641 |
| Crude ore, tailings, and concentrates received for treatmentdo | 10,891 | | 38 | 852 | 1,792 | 4,628 | 8,330 |
| Fueldo Purchased electric energydo Contract workdo | 933 753 1,885 | 27 128 71 | 30 25 145 | 22 26 46 | 406 280 897 | 82 84 136 | 366 210 590 |
| Purchased machinery installeddo | 3,562 | 453 | 197 | 70 | 1,426 | 359 | 1,057 |
| Capital expenditures (development work, construction, machinery, and equipment)do | 6,326 | 472 | 287 | 220 | 2,750 | 950 | 1,647 |
| For machinery and equipment onlydo | 2,891 | 453 | 197 | 66 | 1,070 | 308 | 797 |
| Horsepower rating of power equipment51,000 | 157 | 6 | 5 | 7 | 60 | 17 | 62 |
| Water intake ⁶ ,000,000 gallons | 3,380 | 598 | 240 | 192 | 1,211 | 292 | 847 |

¹See table 1, footnote 4.

²The value of shipments for Washington represents less than 0.1 percent of the total.

³See table 1, footnote 5.

⁴See table 1, footnote 6.

⁵See table 1, footnote 7.

⁶See table 1, footnote 8.

January 1956

Series:

MI-10-6-2

MANGANESE ORES

During 1954 the value of shipments of the manganese ores industry amounted to \$32 million. Shipments by the industry of manganese ores and concentrates containing 35 percent or more manganese amounted to 218 thousand long tons, valued at \$19 million. Shipments of manganese ores and concentrates containing less than 35 percent manganese, and of all other products and services, were valued at \$13 million. Imports of manganese ores and concentrates during 1954 amounted to 2,103 thousand long tons, valued at \$77 million, almost half of which came from India.

The principal expenses of the manganese ores industry in the United States included \$9 million for wages and salaries, \$5 million for supplies, \$5 million for manganese ores received from other establishments for beneficiation, \$1 million for fuel and purchased electric energy, and about \$4 million for contract work. The cost of purchased machinery installed was \$2 million. Employment in the industry averaged about 2,500 for the year. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$3 million. The total horsepower of equipment available for use by the industry was 107 thousand. Water intake during the year, including mine water used, was nearly 3 billion gallons.

The 453 thousand long tons of net shipments of manganese ores and concentrates represented more than a ninefold increase over the production of merchantable manganese ores in 1939, the year covered by the preceding Census of Mineral Industries. Net shipments were computed by subtracting the figure for "Receipts of manganese ores from other establishments for beneficiation" from the figure for "Shipments and interplant transfers of manganese ores and concentrates." Such net shipments represent manganese ores and concentrates shipped to consumers in other industries or to the General Services Administration purchase depots. Employment in the industry increased almost fivefold since 1939, while the horsepower of power equipment in 1954 was more than 21 times that in 1939. Manganese ores establishments were operated in 15 States in 1954, with nearly one fourth of the net shipments coming from Montana and another fourth from Arizona.

The manganese ores industry represents establishments primarily engaged in mining, milling, or otherwise preparing manganese ores, such as pyrolusite, rhodochrosite, psilomelane, and manganite. This definition is in accordance with the Standard Industrial Classification of the Bureau of the Budget (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949).



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin "Ferro-Alloy Ores, Except Vanadium," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 Census of Mineral Industries was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U.S. Department of the Interior) to minimize duplication in canvassing mineral establishments. The census report form used for the manganese ores industry also provided the information required by the Bureau of Mines for its annual statistics on manganese ores.

Table 1 .-- PRINCIPAL STATISTICS FOR THE MANGANESE ORES INDUSTRY IN THE UNITED STATES: 1954, 1939, 1929, AND 1919

(Excludee establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.)

| Item | 1954 | 1939 | 1929 | 1919 |
|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------|------------------|-------------------------|
| Net ehipmente of manganese oree and concentratee11,000 long tons | 453 | 48 | 41 | (NA) |
| Value of shipmente ² \$1,000, | 32,123 | 945 | 1,185 | 2,188 |
| Value added in mining ³ do | 17,982 | 706 | 968 | 1,493 |
| Number of employeee, total4 | 2,532 | 545 | 389 | 997 |
| Production and development workers | 2,209 323 | 504 41 | 354 35 | 909 88 |
| Man-houre worked by production and development workers | 4,178 | 959 | (NA) | (NA) |
| Principal expenses, total\$1,000 | 24,221 | 806 | 697 | 1,915 |
| Wages of production and development workersdo Salaries of all other employeesdo Suppliesdo Manganee ores received from other establishmente for | 7,461 1,585 5,065 | 483 84 162 | 392 88 140 | 1,086 134 448 |
| beneficiation. | 5,384 708 474 3,544 | (NA) 37 40 | (NA) 32 39 | (NA) 52 46 149 |
| Purchased machinery installeddo | 2,161 | (NA) | (NA) | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 3,195 | (NA) | (NA) | (NA) |
| For machinery and equipment.onlydo | 1,871 | 35 | 12 | (NA) |
| Horsepower rating of power equipment ⁵ ,1,000 | 107 | 5 | 2 | 6 |
| Water intake ⁶ 1,000,000 gallons | 2,852 | (NA) | (NA) | (NA) |

NA Not available.

For 1954, represents "Shipments and interplant transfers of manganese ores and concentrates" less "Receipts of manganese ores from other establishments for beneficiation." (See table 3.) For 1939 and 1929, represents production.

Represente value of shipments and interplant transfers of crude manganese ores and concentrates, and value of secondary products and services of manganese ores establishments. Figures for yeare prior to 1954 represent value of production and services.

For 1954, represents value of products shipped plus capital expenditures less cost of supplies, manganese ores received for beneficiation, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, 1929, and 1919 represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. "Value added," as computed for 1954, thus represents the value added during the year in the manganese ores industry by mining and beneficiating manganese ores, producing other products, nerforming services for others. and in development of manganese ores properties. Performing services for others, and in development of manganese ores properties.

Agepresents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

Represents total water intake from publicly and privately owned systems and mine water used.

| | | | hsast, ral, and South | | Mou | ıntain | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------|---------------------------------------------------------------------|---------------|---------------|-------------|--------------------------------------------|----------------------------------------------|
| Item | United States, total | Tennesses | Pennsylvania, Missouri, Virginia, Georgia, and Arkansas | Montana | New Maxico | Arizona | Idaho, Colorado, Utah, and Nevada | Pacific (Washington and California) |
| Nst shipments of manganese ores and concentrates 1 | 453 | (1) | (1) | 111 | 65 | 105 | (¹) | 39 |
| Value of shipments, total\$1,000 | 32,123 | 1,011 | 3,902 | 10,963 | 2,199 | 4,058 | 8,524 | 1,466 |
| Manganese ores and concentrates containing 35 percent or more manganesedo Manganese ores and concentrates containing 1sss than 35 percent manganese and other | 19,385 | 1,011 | 3,742 | 10,963 | 2,199 | 693 | 8,330 | 465 |
| products and servicesdo | 12,738 | | 160 | Į | | 3,365 | 194 | 1,001 |
| Value added in mining ² do | 17,982 | 794 | 2,663 | 4,956 | 1,602 | 2,545 | 4,308 | 1,114 |
| Number of employess, total ³ | 2,532 | 152 | 468 | 1,050 | 223 | 197 | 332 | 110 |
| Production and development workers | 2,209 323 | } 152 | 468 | { 878 172 | 208 15 | 191 6 | 228 104 | 99 11 |
| Man-hours worked by production and development workers | 4,178 | 299 | 705 | 1,633 | 462 | 353 | 504 | 222 |
| Principal expenses, total\$1,000 | 24,221 | 663 | 2,676 | 10,465 | 1,280 | 2,259 | 5,932 | 946 |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies and manganese ores received from | 7,461 1,585 | 395 | 927 | {3,463 824 | 649 63 | 624 12 | 1,068 609 | 367 45 |
| other establishments for beneficiationdo | 10,449 | 138 | 1,292 | 5,155 | 164 | 357 | 3,254 | 89 |
| Fueldodo | 708 474 | 55 34 | 123 17 | 178 220 | 404 | ∫ 99 21 | 1,001 | } 47 |
| Contract workdodo | 3,544 | 41 | 317 | 625 | | 1,146 |], | 398 |
| Purchased machinery installeddo | 2,161 | 216 | 1,036 | 81 | 185 | 320 | 134 | 189 |
| Capital expenditures (development work, construction, machinery, and equipment)do | 3,195 | 267 | 1,546 | 252 | 156 | 430 | 173 | 371 |
| For machinery and equipment onlydo | 1,871 | 176 | 948 | 119 | 104 | 214 | 123 | 187 |
| Horsepower rating of power equipment41,000 | 107 | 6 | 19 | 34 | 6 | 21 | 11 | 10 |
| Water intake ⁵ 1,000,000 gallons | 2,852 | 444 | 341 | 1,067 | 154 | (D) | (D) | 59 |

Table 3.--CRUDE MANGANESE ORE MINED PAND SHIPMENTS, RECEIPTS, AND NET SHIPMENTS OF MANGANESE ORES AND CONCENTRATES
IN THE MANGANESE ORES INDUSTRY IN THE UNITED STATES: 1954

| Item | Quantity (1,000 long tons) | Value (\$1,000) |
|------------------------------------------------------------------------------------|-------------------------------|---------------------|
| Crude ore mined containing 5 percent or more manganese | 1,566 | ••• |
| Shipments and interplant transfers of manganese ores and concentrates | 828 | ¹ 32,123 |
| Containing 35 percent or more manganese | 218 610 | 19,385 212,738 |
| Crude manganese ore beneficiated: Mined and beneficiated at the same establishment | 857 375 | s 5,384 |
| Wet shipments of manganese ores and concentrates3 | 453 | ¹ 26,739 |

Dwithheld to avoid approximately disclosing figures for individual companies.

Represents "Shipments and interplant transfers of manganese ores and concentrates" less "Receipts of manganese ores from other establishments for beneficiation." For derivation of the United States total, see table 3. For States or combinations of States figures are not shown if any receipts of manganese ores for beneficiation were from establishments not located in these States or combinations of States.

2 See table 1, footnote 3.

3 See table 1, footnote 4.

4 See table 1, footnote 5.

5 See table 1, footnote 6.

Includes the value of secondary products and services of the industry amounting to less than 5 percent of the total.

Includes the value of secondary products and services of the industry amounting to less than 10 percent of the total.

Represents "Shipments and interplant transfers of manganese ores and concentrates" less "Receipts of manganese ores from other establishments for beneficiation."

October 1955 Series: M1-10-6-3

MOLYBDENUM, CHROMIUM, COBALT, AND NICKEL ORES

The value of shipments during 1954 of establishments primarily engaged in producing molybdenum, chromium, cobalt, and nickel ores and concentrates amounted to close to \$60 million. Of this total, \$54 million represented the value of such concentrates; and \$6 million represented the value of shipments of crude ores (both to separate concentration plants and to manufacturing establishments) and of other products and services. The principal expenses of these establishments included \$13 million for wages and salaries, \$10 million for supplies, \$0.5 million for crude ores received for treatment, \$2 million for fuel and electric energy, and \$3 million for contract work. The cost of purchased machinery installed was \$2 million. Employment in these establishments averaged over 2 thousand for the year. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$5 million. The total horsepower of equipment available for use by these establishments was 107 thousand. Water intake for use during the year, including mine water, was 1.4 billion gallons. (See reverse for detailed statistics.)

The 1954 value of shipments by molybdenum, chromium, cobalt, and nickel ore establishments represented nearly a fourfold increase since 1939, the year covered by the preceding Census of Mineral Industries. The tonnage of crude ore mined by such establishments increased almost threefold over this period. Employment more than doubled between 1939 and 1954, and horsepower of power equipment increased threefold. Producing molybdenum ore establishments were located in Colorado and New Mexico; chromite ore establishments in Montana, Oregon, and California; cobalt, in Idaho; and nickel, in Oregon. (This preliminary report does not include statistics for establishments located in Alaska.) In addition to production at these establishments, substantial quantities of molybdenum, cobalt, and nickel were obtained as byproducts of the concentration, smelting, and refining of other metallic ores. Imports of chromium, cobalt, and nickel ores and concentrates were valued at approximately \$45 million in 1954. Chromium imports came principally from Turkey, the Philippine Republic, and the Union of South Africa; cobalt imports from the Belgian Congo; and nickel imports from Canada. Imports of molybdenum ores were negligible.

The ''Molybdenum ores'' industry, as defined in the Standard Industrial Classification Manual of the Bureau of the Budget, represents establishments primarily engaged in mining, milling, or otherwise preparing molybdenum ores (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949). The industry, ''Ferro-alloy ores, except vanadium, not elsewhere classified'' includes establishments primarily engaged in mining, milling, or otherwise preparing ferro-alloy ores, such as chromium, nickel, and columbium. (There were no establishments primarily engaged in mining or preparation of columbium ores during 1954.) Although establishments primarily engaged in mining and preparing cobalt ores are currently classified in the ''Nonmetallic minerals (ores), not elsewhere classified'' industry, such establishments have been included in this report since cobalt is most closely related in use to chromium, molybdenum, nickel, and other ferro-alloy ores. Separate statistics cannot be published for the ''Molybdenum ores'' industry and the ''Ferro-alloy ores, except vanadium, not elsewhere classified'' industry without approximately disclosing the operations of individual companies. Of the tonnage of molybdenum, chromium, cobalt, and nickel ores mined in 1954, more than 95 percent was treated prior to shipment. Only in the case of chromium ores was any significant quantity shipped to other mineral establishments for preparation.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Ferro-Alloy Ores, Except Vanadium," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases will be issued for other industries within the next few months.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) in order to minimize duplication in canvassing mineral establishments. The census report form used for molybdenum, chromium, cobalt, and nickel ores also provided the information required by the Bureau of Mines for its annual statistics on these minerals.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

For sale by Bureau of the Census, Washington 25, D. C. and U. S. Department of Commerce Field Offices. 10 cents.

PRINCIPAL STATISTICS FOR MOLYBDENUM, CHROMIUM, COBALT, AND NICKEL ORES ESTABLISHMENTS IN THE UNITED STATES: 1954 AND 1939 (Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939, less than \$2,500.)

| Item | 1954 | 1939 ¹ |
|-----------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------|
| Value of shipments, total\$1,000 | 59,417 | ² 15,458 |
| Molybdenum, chromium, and cobalt concentratesdo | 53,633 | (NA) |
| other products and servicesdo | 5,784 | (NA) |
| Value added in mining ³ do | 47,358 | 13,287 |
| Number of employees, total ⁴ | 2,288 | 1,061 |
| Production and development workers | 1,898 390 | 941 120 |
| Man-hours worked by production and development workers1,000 | 4,428 | 2,046 |
| Principal expenses, total\$1,000 | 28,194 | ⁵ 4,194 |
| Wages of production and development workers | 10,384 2,619 9,751 455 350 1,300 | 1,477 546 1,724 (NA) 42 363 42 |
| Purchased machinery installeddo | 2,340 | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 5,472 | (NA) |
| For machinery and equipment onlydo | 1,964 | 104 |
| Horsepower rating of power equipment ⁶ | 107 | 35 |
| Water intake ⁷ | 1,440 | (NA) |

NA Not available.

In 1939, there were no establishments primarily engaged in producing cobalt or nickel ores or concentrates.

Represents value of products.

For 1954, represents value of products shipped plus capital expenditures less cost of supplies, ores received for treatment, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work.

Appreciate the less cost of supplies, fuel, purchased electric energy, and contract work.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Excludes the cost of ores received from other establishments for treatment.

⁶Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy. ⁷Represents total water intake from publicly and privately owned systems, and mine water used for mineral production.

September 1956 Series: MI-10-8

MINING CONTRACT SERVICES

Receipts for services by the mining contract services industries (exclusive of the anthracite stripping contract services and oil- and gas-field contract services industries) amounted to \$62 million in 1954. The principal expenses of these mining contract services industries included \$23 million for wages and salaries, \$14 million for supplies, \$3 million for fuel and electric energy, and more than \$1 million for subcontract work. Cost of purchased machinery installed was \$5 million. Employment in the industry averaged 5,119 for the year. Capital expenditures for new construction and new and used machinery amounted to approximately \$5 million. The total horsepower of equipment available for use in these industries was 354 thousand.

The total receipts for services by these mining contract services industries in 1954 were approximately fourteen times as large as in 1939, the year covered by the preceding Census of Mineral Industries. The increase was proportionately greatest for the bituminous coal and lignite mining contract services industry (29 times as large as 1939), followed by the metal mining contract services industry (16 times as large). There was a sixfold increase during this period in receipts by the nonmetallic minerals (except fuels) contract services industry, while the 1954 receipts reported by establishments in the anthracite contract services, except strip mining, industry were only about one and one-half times as large as in 1939. For this group of mining contract services industries as a whole, there was more than a threefold increase in employment between 1939 and 1954 and a sevenfold increase in the horse-power of equipment available for use.

The "Metal mining contract services" industry, as defined in the Standard Industrial Classification, represents establishments primarily engaged in performing contract services for the metal mining industries, such as prospecting, mine explora-



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

GROUP 1

GROUP

tion, and development work including the removal of overburden, sinking shafts, and diamond drilling. Similarly, establishments primarily engaged in performing such services for the bituminous coal and lignite mining industries and for the nonmetallic minerals, except fuels, mining and quarrying industries are classified, respectively, in the "Bituminous coal and lignite mining contract services" industry and the "Nonmetallic minerals, except fuels, contract services" industry. The "Anthracite contract services, except strip mining," industry represents establishments primarily engaged in performing such services, except strip mining, for the anthracite mining industry. Establishments primarily engaged in contract strip mining of anthracite are separately classified, and preliminary statistics for this industry were previously published in the preliminary report, MI-11-2, "Anthracite Stripping Contract Services." Establishments primarily engaged in performing drilling and other services for the crude petroleum and natural gas industries are also separately classified and statistics for them have been published in the preliminary report, MI-13-3, "Oil- and Gas-Field Contract Services." Establishments primarily engaged in performing hauling services are not included in the Mining Division, according to the Standard Industrial Classification, and were not covered in the 1954 minerals census. Establishments in the four industries covered by this preliminary report filed one census report for all mining contract services performed in the United States. Establishments performing services for more than one industry, or in more than one State, were classified on the basis of the industry and the State accounting for the largest portion of their total receipts.

METAL MINING CONTRACT SERVICES--Receipts in 1954 for this industry were \$38 million. Of this total, approximately \$16 million was reported by establishments serving primarily copper, lead, zinc, and gold mines; \$10 million by establishments primarily serving iron ore mines; and \$11 million by establishments serving mines of other metallic ores (primarily uranium ores). Approximately one-half of the receipts reported by establishments in this industry was for stripping overburden and strip mining, about one-fourth for drilling (primarily prospect and test drilling), and the balance mainly for sinking mine shafts and driving mine tunnels. Approximately three-fourths of the total receipts for this industry was reported by establishments classified in the Mountain States, principally Nevada, Utah, and Colorado. Receipts for establishments classified in Pennsylvania, Arkansas, and Michigan also exceeded \$1 million.

ANTHRACITE CONTRACT SERVICES, EXCEPT STRIP MINING--Establishments in this industry reported receipts amounting to \$847 thousand in 1954, all in Pennsylvania. More than 60 percent of this total was received for sinking mine shafts and driving mine tunnels.

BITUMINOUS COAL AND LIGNITE MINING CONTRACT SERVICES--Receipts for services reported for this industry amounted to about \$18 million in 1954. Approximately 90 percent of this total represented receipts for stripping overburden and strip and auger mining. These contractors mined about 7 million tons of coal. Establishments classified in Pennsylvania accounted for nearly 45 percent of this total amount received for services, and West Virginia, approximately an additional 25 percent. The next four ranking States were Kentucky, Montana, Ohio, and Wyoming.

NONMETALLIC MINERALS (EXCEPT FUELS) CONTRACT SERVICES--Establishments in this industry reported receipts of approximately \$6 million in 1954. Receipts for drilling accounted for approximately 45 percent of this total and receipts for stripping overburden and strip mining nearly an additional 40 percent. Establishments in this industry were classified in 28 States, with only Alabama representing receipts in excess of \$1 million. The South Central States as a whole, including Alabama, accounted for more than one-third of the total and the Western and North Central States, an additional one-fourth and one-fifth, respectively.

GENERAL--These statistics are derived from preliminary tabulations of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletins, "Metal Mining Contract Services" and "Nonmetallic Minerals (Except Fuels) Contract Services," and as parts of the bulletins "Anthracite Mining" and "Bituminous Coal and Lignite Mining." These bulletins will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries. The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years.

(Excludes establishments for 1954 with receipts for services and with expenditures less than \$500; and for 1939, less than \$2,500. Contractors basis of the principal industry for which the service was performed.)

| | | | _ | М | etal mining co | ntract service | s |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------|------------------------------------------------|-------------------------------------------|-------------------------------------------|
| Line no. | Item | Tot | al ¹ | То | tal | Iron | ores |
| | | 1954 | 1939 | 1954 | 1939 | 1954 | 1939 |
| . 1 | Amount received or due for services, total\$1,000 | 62,204 | 4,488 | 37,627 | 2,368 | 10,249 | 254 |
| 2 ,3 4 | Stripping overburdendo Strip mining minerals for the account of othersdodo | 38,508 | (NA) | { 12,331 48,089 | (NA) | 3,265 1,517 | (NA) (NA) |
| 5 | mine tunnelsdo Drillingdo Exploration work, including geophysical | 7,513 ⁸ 12,687 | (NA) (NA) | 5,620 9,759 | (NA) (NA) | 2,527 2,456 | (NA) (NA) |
| 7 | and other exploratory surveyingdo All other receiptsdo | 1,033 ⁹ 2,463 | (NA) (NA) | 919 909 | (NA) (NA) | 484 | (NA) |
| 8 | Value added in mining services 10do | 43,753 | 3,503 | 26,047 | 1,822 | 6,682 | 197 |
| 9 | Number of employees, total ¹¹ | 5,119 | 1,491 | 2,943 | 695 | 802 | 109 |
| 10 11 | Production and development workers | 4,802 317 | 1,365 126 | 2,773 170 | 637 58 | 751 51 | 98 11 |
| 12 | Man-hours worked by production and development workers | 10,104 | 2,680 | 6,309 | 1,344 | 1,678 | 175 |
| 13 | Principal expenses, total\$1,000 | 42,131 | ¹² 2,938 | 26,645 | ¹² 1,531 | 8,085 | 12209 |
| 14 15 16 17 18 19 20 | Wages of production and development workersdo. Salaries of all other employeesdo. Suppliesdo Products purchased for resaledo Fuelsdo Purchased electric energydo Subcontract workdo | 21,580 1,891 14,001 327 2,719 180 1,433 | 1,666 287 624 (NA) 336 25 (NA) | 13,524 1,189 9,978 126 1,223 133 472 | 853 132 382 (NA) 144 20 (NA) | 3,814 361 3,465 226 79 140 | 128 24 47 (NA) 8 2 (NA) |
| 21 | Purchased machinery installeddo | 5,000 | (NA) | 2,007 | (NA) | 381 | (NA) |
| . 22 | Capital expenditures (construction, machinery, and equipment)do | 5,209 | (NA) | 2,359 | (NA) | 724 | (NA) |
| 23 | For machinery and equipment onlydo | 4,551 | ¹⁴ 150 | 1,806 | 1447 | 344 | 1427 |
| 24 | Horsepower rating of power equipment 151,000 | 354 | 51 | 149 | 23 | 43 | 2 |
| 25 | Water intake ¹⁶ ,000,000 gallons | 159 | (NA) | 99 | (NA) | (D) | (NA) |

NA Not available.

D Withheld to avoid approximately disclosing figures for individual companies.

LEXCLUDES the anthracite stripping contract services industry and the oil and gas field contract services industries for which separate

^{*}Excludes the anthracite stripping contract services industry and the oil and gas field contract services industries for which separate statistics have been published.

*No contract service companies in 1954 principally served mines in the silver ores industry.

*Receipts for sinking mine shafts and driving mine tunnels account for more than 60 percent of the total.

*Includes receipts for underground mining for the account of others amounting to less than 5 percent of the figure shown.

*Includes receipts for auger mining for the account of others amounting to between 10 and 15 percent of the figure shown.

*Receipts for sinking mine shafts and driving mine tunnels are included with "All other receipts" and amount to between 5 and 10 percent of the latter figure.

of the latter figure.

**8Receipts for prospect and test drilling account for more than 90 percent of the total receipts for drilling.

were requested to prepare one report for all mining contract services performed in the United States. These reports were classified on the

| Me | tal mining co | ntract service | es | Anthracite | contract | Bituminous | coal and | | c minerals | |
|----------------------------------------------|-----------------------------------------------|--------------------------------------------------|-------------------------------------------|------------------------------|---------------------------------------|------------------------------------------------------|--------------------------------------------|------------------------------------------------|----------------------------------------------|----------------------------------------|
| Copper, 1 gold, and s | ead, zinc, ilver ores ² | Other meta | llic ores | services, strip m | | lignite contract | mining services | (except contract | | Line no. |
| 1954 | 1939 | 1954 | 1939 | 1954 | 1939 | 1954 | 1939 | 1954 | 1939 | <u> </u> |
| 16,107 | 1,897 | 11,271 | 217 | ³ 847 | 542 | 17,543 | 612 | 6,187 | 966 | 1 |
| | | | | | ••• | ⁵ 15,690 | (NA) | ∫ 634 | (NA) | 2 |
| 14,546 | (NA) | 4,185 | (NA) | {, | | 5 15,690 | (NA) | 61,764 | (NA) | 3 |
| 1,146 | (NA) | 6,157 | (NA) | 3847 | (NA) | 1,853 | (NA) | (⁷) 2,788 | (NA) (NA) | 4 5 |
| 415 | (NA) | 148 781 | (NA) (NA) | J | | | | 71,001 | (NA) (NA) | 6 7 |
| 11,296 | 1,464 | 8,069 | 161 | 666 | 479 | 12,469 | 477 | 4,571 | 725 | 8 |
| 1,107 | 514 | 1,034 | 72 | 137 | 233 | 1,436 | 228 | 603 | 335 | 9 |
| 1,078 | 471 43 | 944 90 | 68 4 | 129 8 | 222 11 | 1,321 115 | 199 29 | 579 24 | 307 28 | 10 11 |
| 2,561 | 1,046 | 2,070 | 123 | 167 | 339 | 2,444 | 365 | 1,184 | 632 | 12 |
| 10,692 | ¹² 1,156 | 7,868 | ¹² 166 | 659 | ¹² 338 | 10,991 | ¹² 461 | 3,836 | ¹² 608 | 13 |
| 5,581 209 4,330 522 30 20 | 644 79 294 (NA) 123 16 (NA) | 4,129 619 2,183 126 475 24 312 | 81 29 41 (NA) 13 2 (NA) | 445 34 13154 26 | 254 21 37 (NA) 26 (NA) | 5,491 557 133,692 68 1,147 36 (13) | 240 86 81 (NA) 53 1 (NA) | 2,120 111 930 133 323 11 208 | 319 48 124 (NA) 113 4 (NA) | 14 15 16 17 18 19 20 |
| 747 | (NA) | 879 | (NA) | 74 | (NA) | 2,537 | (NA) | 382 | (NA) | 21 |
| 838 | (NA) | 797 | (NA) | 73 | (NA) | 2,406 | (NA) | 371 | (NA) | 22 |
| 715 | 1420 | 747 | | 73 | 149 | 2,320 | 1441 | 352 | ¹⁴ 53 | 23 |
| 43 | 19 | 63 | 2 | 1 | 2 | 170 | 8 | 34 | 18 | 24 |
| (D) | (NA) | 74 | (NA) | | (NA) | 39 | (NA) | 21 | (NA) | 25 |

9Includes primarily receipts for hauling performed as a secondary activity, receipts for other services not specified above, and recaipts

Includes primarily receipts for hauling performed as a secondary activity, receipts for other services not specified above, and recaip for products purchased and resold without further processing.

10For 1954, represents receipts for services plus capital expenditures less cost of supplies, products purchased for resale, fuel, purchased electric energy, subcontract work, and purchased machinery installed; for 1939, represents receipts for services less cost of supplies, fuel, and purchased electric energy.

11Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

12Excludes the cost of subcontract work and of products purchased for resale, which are not available.

13Cost of subcontract work is included with the cost of supplies.

14Includes the cost of buildings.

15Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

16Represents total water intake from publicly and privately owned systems, and mine water used.

(Contractors were requested to prepare one report for all mining contract services performed in the United States. These reports was performed.)

| | | | Metal mi | ning contract s | services |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Line no. | Item . | Total ¹ | Total | Middle Atlantic (New York, New Jersey, and Pennsylvania) | North Central (Illinois, Michigan, Minnesota, Missouri, South Dakota, and Kansas) |
| 1 | Amount received or due for services\$1,000 | 62,204 | 37,627 | 4,682 | 2,107 |
| 2 | Value added in mining services ² do | 43,753 | 26,047 | 3,770 | 1,494 |
| 3 | Number of employees, total ³ | 5,119 | 2,943 | 462 | 183 |
| 4 5 | Production and development workers | 4,802 317 | 2,773 170 | 433 , 29 | 175 8 |
| 6 | Man-hours worked by production and development workers | 10,104 | 6,309 | 970 | 386 |
| 7 | Principal expenses, total\$1,000 | 42,131 | 26,645 | 3,481 | 1,391 |
| 8 9 10 11 12 13 14 | Wages of production and development workers .do Salaries of all other employees .do Supplies .do Products purchased for resale .do Fuels .do Purchased electric energy .do Subcontract work .do | 21,580 1,891 14,001 327 2,719 180 1,433 | 13,524 1,189 9,978 126 1,223 133 472 | 2,378 191 4842 67 3 (4) | 729 63 488 84 1 26 |
| 15 | Purchased machinery installeddo | 5,000 | 2,007 | 158 | 170 |
| 16 | Capital expenditures (construction, machinery, and equipment)do | 5,209 | 2,359 | 158 | 156 |
| 17 | For machinery and equipment onlydo | 4,551 | 1,806 | 158 | 143 |
| 18 | Horsepower rating of power equipment ⁵ | 354 | 149 | 8 | 13 |
| 19 | Water intake ⁶ ,000,000 gallons | 159 | 99 | | (D) |
| | | Total | Middle Atlantic (Pennsyl- vania) | North Central (Ohio, Indiana, Iowa, Missouri, and North Dakota) | South Atlantic (West Virginia) |
| 20 | Amount received or due for services | 17,543 | 7,766 | 976 | 4,543 |
| 21 | Value added in mining services ² do | 12,469 | 5,463 | 621 | 3,054 |
| 22 | Number of employees, total ³ | 1,436 | 722 | 83 | 385 |
| 23 24 | Production and development Workers | 1,321 115 | 662 60 | 80 3 | 355 30 |
| 25 | Man-hours worked by production and development workers | 2,444 | 1,305 | 135 | 584 |
| 26 | Principal expenses, total\$1,000 | 10,991 | 5,091 | 635 | 3,062 |
| 27 28 | Wages of production and development workersdo Salaries of all other employeesdo | 5,491 557 | 2,657 287 | 276 | 1,411 130 |
| 29 30 | Supplies | ⁴ 3,692 68 | 1,178 34 | ⁴ 271 | 877 34 |
| 31 32 | Fuels | 1,147 36 | 586 11 | 82 | 314 |
| 33 | Subcontract workdo | 36 (⁴) | 338 | (4) | 296 |
| 34 | Purchased machinery installeddo | 2,537 | 1,411 | 78 | 322 |
| 35 36 | Capital expenditures (construction, machinery, and equipment)do For machinery and equipment onlydo | 2,406 2,320 | 1,255 1,243 | 76 76 | 354 281 |
| 37 | Horsepower rating of power equipment ⁵ | 170 | 73 | 11 | 35 |
| 38 | Water intake ⁶ | 39 | (D) | ••• | |
| | La constant de la con | | | | |

D Withheld to avoid approximately disclosing figures for individual companies. $^{1}{\rm See}$ table 1, footnote 1. $^{2}{\rm See}$ table 1, footnote 10. $^{3}{\rm See}$ table 1, footnote 11.

| | | | | | | | Metal | mining con | tract service: | 3 | | | | | | T |
|-----|--------------------------------------------------|----------|----------------------|---------------------------------------------------|----------------------------|--------------------------------------|--------------|------------|----------------------------------------------------------|-----|------------------------------------------------------------------------------------------------|---------------------------|-------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------|----------|
| | | - | | | | | | - | Mountain | | | | | | Anthracite | |
| Wes | uth Atlan (Virginia st Virgin nd Georgi | , ia, | Alabama, | | Т | Total (| | olorado | Arizona | | Utah | (Mo I Wy New | r States ntana, daho, oming, Mexico, Nevada) | Pacific (Oregon and California) | contract services, except strip mining (Pennsylvania | Line no. |
| _ | | 890 | - | 1,975 | - | 27,43 | 12 | 4,029 | 1,119 | 7 | 6,923 | | 15,361 | 541 | 847 | 1 |
| | | 505 | | 1,664 | | 18,15 | 19 | 2,755 | 97' | 7 | 3,794 | | 10,633 | 455 | 666 | 2 |
| | | 80 | | 190 | | 1,96 | 4 | 391 | 7: | 5 | 526 | | 972 | 64 | 137 | 3 |
| } | | 80 | { | 177 13 | | 1,85 | | 365 26 | 7: | | 470 56 | | 945 27 | 64 | 129 | |
| • | | 180 | · | 451 | | 4,20 | | 854 | 193 | | 921 | | 2,234 | 122 | 167 | , 6 |
| | | 761 | | 1,211 | | 19,50 | 19 | 3,047 | 523 | 3 | 6,127 | | 9,812 | 292 | 659 | 7 |
| } | | 378 | { | 805 | | 9,08 | | 1,597 | 383 | | 2,202 | | 4,903 | 217 | { 445 | |
| } | | 301 | { | 102 4205 | ļ | 76 8 , 35 | | | 60 | } | 460 3 , 098 | { | 143 4,211 | 30 | (34 4154 | 10 |
| , | | 49 | , | 95 | J | 90 | 7 1 | 136 | 82 | |) 190 | ι | 516 | 21 | 26 | |
| | | 33 | | (4) | | 12 27 | | 162 | | | \ 75 | | 33 6 | 24 | (4) | 13 14 |
| | | 44 | | 101 | | 1,50 | 00 | 318 | 42 | 2 | 282 | | 858 | 34 | 74 | 15 |
| | | 42 | | 94 | | 1,88 | | 330 | 42 | 1 | 618 | | 896 | 23 | 73 | 1 |
| | | 42 | | 94 | | 1,34 | | 317 | 42 | | 219 | | 768 | 23 | 73 | - |
| | | 6 | | 16 | | 10 | | 22 | 3 | | 32 | | 45 | 4 | 1 | 1 |
| | Bitu | (D) | us coal | and lig | nite m | | 16 | (D) | (D) | | 6 | | (D) | | ••• | 19 |
| | | | contract h Centra | servic | | | | | Nonmetal | Lic | North Cent | | fuels) con | tract services | 1 | 4 |
| | Total | | | Other S (Tenne Alab Arkan an Oklah | ssee, ama, sas, d | Wes (Mont Wyom an Washin | ana, ing, | Total | Northeas (Connectic New Jerse and Pennsylvan | ut, | (Ohio, (Ohio, Indiana, Illinois Michigan Wisconsin Iowa, Missouri South Dako Nebraska, Kansas) | , , , ta, and | South Atlantic (North Carolina Georgia and Florida | Alabama, Mississippi | West (Idaho, Wyoming, New Mexico, Arizona, Utah, Nevada, and California) | |
| | 2,326 | | 1,409 | | 917 | | 1,932 | 6,1 | 37 | 424 | 1, | 172 | 6.5 | 2,24 | 1,691 | 20 |
| | 1,779 | | 1,139 | | 640 | | 1,552 | 4,5 | 71 | 353 | | 700 | 54 | 1,90 | 1,074 | 21 |
| | 126 | 1 | 67 | | 59 | | 1,20 | | 03 | 33 | | 89 | | 26' | | |
| | 121 5 | } | 67 | | 59 | { | 103 17 | | 79 | 33 | | 5 | | 33 26' | | |
| | 217 | | 108 | | 109 | | 203 | 1,1 | 34 | 77 | | 161 | 15 | 56 53: | 5 255 | 25 |
| | 1,152 | | 618 | | 534 | | 1,051 | 3,8 | 36 | 229 | | 870 | 43 | 1,160 | 1,160 | 26 |
| | 592 18 | } | 348 | | 262 | { | 555 116 | 2,1 | 20 | 158 | | 376 22 | 24 | | | |
| | 368 | | 4224 | | 4212 | , | 296 | 9 | 30 | 51 | 4 | 282 | 3 | 34 424: | 277 | 29 |
| } | 106 | - | 46 | } | 60 | | 84 | 3 | 23 | 20 | | 57 | · | 18 99 | 1 , | 31 |
| | 68 | | (4) | | (4) | | ••• | | 08 | ••• | | (4) | | (2) | 203 | |
| | (D) | | (D) | | 86 | | (D) | 3 | 32 | 18 | - * | 72 | 2 | 22 15: | 3 117 | 34 |
| | (D) | | (D) | | 81 | | (D) | 1 | 71 | 18 | | 72 | | 12 150 12 151 | | |
| | (D) | | (D) | | 81 | | (D) | | 52 | 18 | | 72 | | | | |
| | 10 | | 4 | | 6 | | 41 (D) | | 34 | | | 6 | | 1 | 7 14 | |
| | ••• | | ••• | | ••• | l | (D) | | 21 | ••• | | ••• | • • | • • | (D) | 38 |

⁴See table 1, footnote 13. ⁵See table 1, footnote 15. ⁶See table 1, footnote 16.

QQMM+DC-

DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS WASHINGTON 25, D. C.

OFFICIAL BUSINESS

Postage and Fees Paid
U. S. Department of Commerce

MI-10-9

July 1956 Series:

MERCURY, TITANIUM, AND MISCELLANEOUS METAL ORES

MERCURY ORES--The value of shipments of the mercury ores industry in 1954, almost all in the form of mercury metal, was \$4,519 thousand. Principal expenses included \$1,922 thousand for wages and salaries, \$1,160 thousand for supplies and minerals received for treatment, \$265 thousand for fuel and purchased electric energy, and \$28 thousand for contract work. The cost of purchased machinery installed was \$226 thousand. Capital expenditures for development work, construction, machinery, and equipment amounted to \$515 thousand. The total horsepower rating of power equipment available for use by the industry was 12 thousand. Water intake during the year, including mine water used, was 12 million gallons.

The 1954 tonnage of crude ore mined in the mercury ores industry represented a decline of 11 percent, and the 17 thousand flasks of mercury metal produced a decline of 4 percent, from the respective levels in 1939, the year covered by the preceding Census of Mineral Industries. The number of employees in 1954 represented a decline of 37 percent from 1939. However, the available horsepower of power equipment increased by 20 percent between 1939 and 1954.

The mercury ores industry, as defined in the Standard Industrial Classification, represents establishments primarily engaged in mining, milling, or otherwise preparing mercury ores, such as cinnabar. It includes the production of metallic mercury by furnacing or retorting at the mine site. During 1954, mercury ores operations were reported in six States, with California accounting for about two-thirds of the total mercury metal output in the United States. The other largest producing States were Nevada, Idaho, and Oregon. Small operations were reported in Alaska. In 1954, imports into the United States of mercury metal for consumption were approximately 65 thousand flasks, valued at more than \$10 million. Major sources were Spain and Italy. The quantity of imports was almost four times the quantity of mercury metal produced domestically.

TITANIUM ORES--The value of shipments of the titanium ores industry in 1954 was \$12,750 thousand. Principal expenses included \$3,699 thousand for wages and salaries, \$2,801 thousand for supplies and minerals received for treatment, \$1,192 thousand for fuel and purchased electric energy, and \$335 thousand for contract work. The cost of purchased machinery installed was \$1,286 thousand. Capital expenditures for development work, construction, machinery, and equipment amounted to \$3,998 thousand. The total horsepower rating of power equipment available for use by the industry was 46 thousand. Water intake was almost three billion gallons.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

Production of titanium concentrates by the industry in 1954 was more than 30 times as great as production of such concentrates in 1939. The number of employees in 1954 was more than four times, and the horsepower of power equipment 23 times, the respective levels in 1939.

The titanium ores industry, as defined in the Standard Industrial Classification, represents establishments primarily engaged in mining, milling, or otherwise preparing titanium ores, such as ilmenite and rutile. Operations in the industry in 1954 were reported in five States, with New York the leading producer. Considerable production also took place in Florida. The other producing States were Pennsylvania, Virginia, and California. Together with operations outside the titanium ores industry, a total of 557 thousand short tons of concentrates were produced in the United States in 1954, principally from ilmenite ores. Imports of titanium concentrates into the United States during 1954 amounted to about 290,000 short tons, mainly ilmenite, valued at more than \$6 million. India and Canada provided almost all of the imports. The tonnage of concentrates imported was more than half as large as the tonnage domestically produced.

METALLIC MINERALS, NOT ELSEWHERE CLASSIFIED--The value of shipments of the metallic minerals (ores), not elsewhere classified, industry during 1954, exclusive of establishments operating in Alaska, was \$1,308 thousand. Principal expenses included \$447 thousand for wages and salaries, \$655 thousand for supplies and minerals received for treatment, \$73 thousand for fuel and purchased electric energy, and \$131 thousand for contract work. The cost of purchased machinery installed was \$748 thousand. Capital expenditures for development work, construction, machinery, and equipment amounted to \$1,077 thousand. The total horse-power rating of power equipment available for use by establishments classified within the industry was 19 thousand.

The metallic minerals (ores), not elsewhere classified, industry, as defined in the Standard Industrial Classification, represents establishments primarily engaged in mining, milling, or otherwise preparing miscellaneous metallic minerals (ores) not elsehwere classified, such as ores of antimony, beryllium, cobalt, platinum-group metals, tantalum, thorium, tin, and cerium and other rare-earth metals. Since cobalt is most closely related in use to chromium, molybdenum, nickel, and other ferro-alloy ores, data for establishments primarily engaged in mining and milling cobalt ores were included in the preliminary report for Molybdenum, Chromium, Cobalt, and Nickel Ores (Series MI-10-6-3).

Establishments classified in this industry operated in 12 States during 1954 and produced ores or concentrates of antimony, beryllium, rare-earth metals, and tantalum.

GENERAL--These statistics are derived from preliminary tabulations of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin "Miscellaneous Metal Ores," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) to minimize duplication in canvassing mineral establishments. The census report form used for the mercury ores, titanium ores, and metallic minerals, not elsewhere classified, industries also provided the information required by the Bureau of Mines for its annual statistics on these minerals.

Table 1.--PRINCIPAL STATISTICS FOR THE MERCURY, TITANIUM, AND METALLIC MINERALS, NOT ELSEWHERE CLASSIFIED, INDUSTRIES, IN THE UNITED STATES: 1954, 1939, 1929, AND 1919

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.)

| | M | ercury ore | s industry | | Titaniu indu | m ores stry | Metallic minerals, not | |
|--------------------------------------------------------------------------------------------------------------------|--------------|------------|-------------------|-------------------|---------------------|----------------|-----------------------------------------------------------|--|
| Item | 1954 | 1939 | 1929 ¹ | 1919 ¹ | 1954 | 1939 | elsewhere classified, industry ² 1954 | |
| Mercury metal producedFlasks (76 lbs.) | 17,487 | 18,222 | 23,769 | (NA) | | | ••• | |
| Titanium concentrates shipped3Short tons | ••• | | | ••• | 541,519 | 16,471 | ••• | |
| Value of shipments, total ³ \$1,000 | 4,519 | 1,830 | 2,820 | 1,803 | 12,750 | 458 | 1,308 | |
| Primary products of the industrydo Other products and servicesdo | 4,519 | 1,830 | 2,820 | 1,803 | { 8,647 4,103 | 438 20 | 1,272 36 | |
| Value added in mining4do | 3,355 | 1,424 | 2,042 | 1,235 | 11,134 | 370 | 778 | |
| Number of employees, total ⁵ | 443 | 702 | 1,117 | 819 | .843 | 196 | 118 | |
| Production and development workers | 372 71 | 621 81 | 1,029 88 | 748 71 | 568 2 7 5 | 183 13 | 98 20 | |
| Man-hours worked by production and development workers | 841 | 1,421 | (NA) | (NA) | 1,261 | 322 | 207 | |
| Principal expenses, total\$1,000 | 3,375 | 1,323 | 2,382 | 1,617 | 8,027 | 270 | 1,306 | |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies and minerals received for | 1,607 315 | 753 164 | 1,384 220 | 828 221 | 2,397 1,302 | 140 42 | 338 109 | |
| treatment ⁶ do Fueldo. | 1,160 | 229 139 | 464 230 | 403 128 | 2,801 449 | 38 15 | 655 41 | |
| Purchased electric energydodo | 61 28 | 34 4 | 69 15 | 29 8 | 743 335 | 35 | 32 131 | |
| Purchased machinery installeddo | 226 | (NA) | (NA) | (NA) | 1,286 | (NA) | 748 | |
| Capital expenditures (development work, construction, machinery, and equipment)do | 515 | (NA) | (NA) | (NA) | 3,998 | (NA) | 1,077 | |
| For machinery and equipment onlydo | 172 | 192 | 618 | (NA) | 1,094 | 72 | 744 | |
| Horsepower rating of power equipment 71,000 | 12 | 10 | 6 | 3 | 46 | 2 | 19 | |
| Water intake ⁸ 1,000,000 gallons | 12 | (NA) | (NA) | (NA) | 2,793 | (NA) | ••• | |

¹Excludes data for nonproducing mercury ores operations.

**Coperations by establishments engaged primarily in mining or treating platinum-group or tin ores were reported only for Alaska, and the figures for such Alaskan operations are not included above.

**Figures for 1939, 1929, and 1919 represent production.

**For 1954, represents total value of shipments plus capital expenditures less cost of supplies, minerals received for treatment, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, 1929, and 1919, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "Value added," as computed for 1954, represents the value added during the year in the mercury ores, titanium ores, and miscellaneous metal ores. industries by mining and treating such ores, producing secondary products, performing services for others, and in development of mineral properties.

²Operations by establishments engaged primarily in mining or treating platinum-group or tin ores were reported only for

Franciscus an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Data for the cost of minerals received for treatment are excluded for 1939, 1929, and 1919.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

Represents total water intake from publicly and privately owned systems and mine water used.

| Item | United States, total | California | Other States (Idaho, Arizona, Nevada, Washington, and Oregon) |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------|---------------------------------------------------------------|
| Crude ore minedShort tons | 175,373 | 123,197 | 52,176 |
| Ore treated, totaldo | 173,027 | 120,871 | 52,156 |
| Mined ore, totaldo | 170,052 | 120,066 | 49,986 |
| Treated in furnacesdodo | ¹ 157,972 12,080 | ¹ 110,438 9,628 | 47,534 2,452 |
| Material from old surface ore, dumps, etcdo | 2,975 | 805 | 2,170 |
| Mercury metal producedFlasks (76 lbs.) | 17,487 | 11,260 | 6,227 |
| Value of shipments\$1,000 | 4,519 | 2,987 | 1,532 |
| Value added in mining ² do | 3,355 | 2,067 | 1,288 |
| Number of employees, total ³ | 443 | 285 | 158 |
| Production and development workers | 372 71 | 230 55 | 142 16 |
| Man-hours worked by production and development workers1,000 | 841 | 508 | 333 |
| Principal expenses, total\$1,000 | 3,375 | 2,227 | 1,148 |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies and minerals received for treatmentdo Fueldo Purchased electric energydo Contract workdo | 1,607 315 1,160 204 61 28 | 1,001 202 869 103 47 5 | 606 113 291 101 14 23 |
| Purchased machinery installeddo | 226 | 129 | 97 |
| Capital expenditures (development work, construction, machinery, and equipment)do | 515 | 233 | 282 |
| For machinery and equipment onlydo | 172 | 62 | 110 |
| Horsepower rating of power equipment ⁴ | 12 | 7 | 5 |
| Water intake ⁵ | 12 | 6 | 6 |

lincludes ore treated chemically, amounting to less than 0.1 percent of the total for the United States.

See table 1, footnote 4.

See table 1, footnote 5.

See table 1, footnote 7.

See table 1, footnote 8.

Table 3.--PRODUCTION AND SHIPMENTS OF MERCURY AND OF TITANIUM AND BERYLLIUM CONCENTRATES IN THE UNITED STATES: 1954 AND 1939

| | | | 1954 | | 1939 pi | roduction | |
|----------------------------------------------------------------------------------------|------------------------------------|----------------------------|------------------|-------------------------------------------|--------------------------|---------------------------|--|
| Product | Unit of measure for quantity | re | | ents and nt transfers | | Value f.o.b. | |
| | XOI Quality | (quantity) | Quantity | Value f.o.b. mine or mill (\$1,000) | Quantity | mine or mill (\$1,000) | |
| Mercury metal, total ¹ | Flasks (76 lbs.) | 17,487 | 18,995 | ² 4,519 | 18,222 | 1,814 | |
| Produced from mined ore, total | do. | 17,363 | xxx | ххх | 18,111 | 1,801 | |
| In furnaces | do. do. | ³ 16,460 903 | xxx | xxx | 1 6, 565 1,546 | 1,640 161 | |
| Produced from old surface ore, dumps, etc | do. | 124 | xxx | xxx | 111 | 13 | |
| Titanium concentrates, total | Short tons | 557,276 | 541,519 | ⁴ 8,647 | 16,471 | 438 | |
| Ilmenite concentrates | do. do. | 547,982 9,294 | 531,924 9,595 | 47,455 1,192 | (5) (5) | (NA) (NA) | |
| Beryllium concentrates (net) ⁵ , total | do. | 618 | 711 | 356 | 81 | 3 | |
| Produced in the Metallic minerals, not elsewhere classified, industry Other industries | do. do. | 567 51 | 662 49 | 335 21 | } 81 | 3 | |

NA Not available.

1For 1954 and 1939, represents only establishments classified in the mercury ores industry. No production or shipment of mercury was reported in other mineral industries.

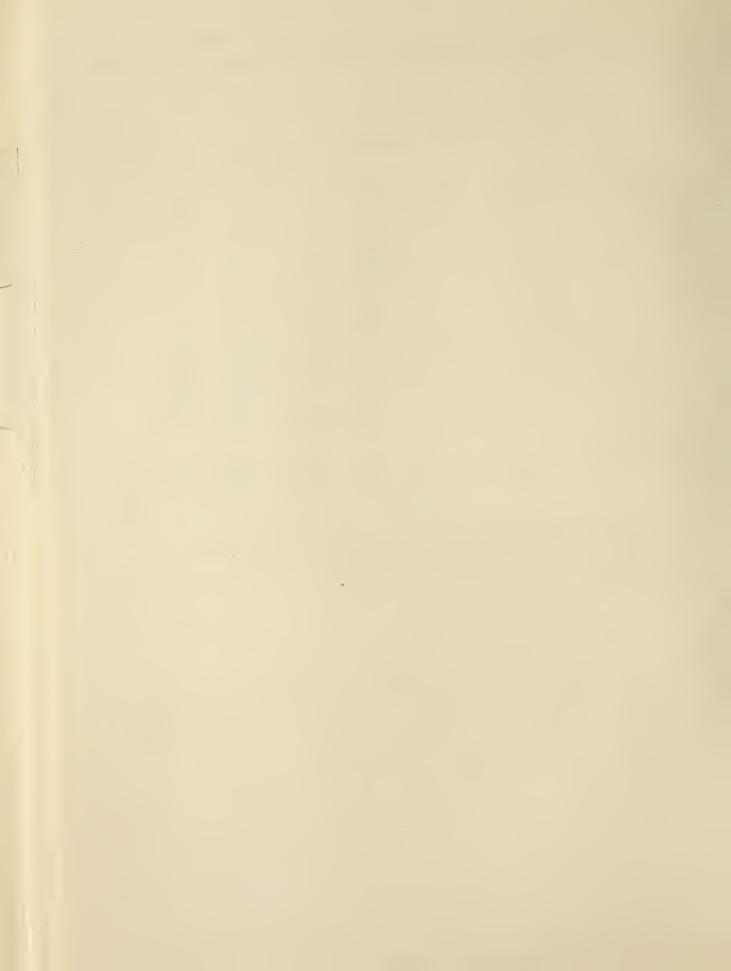
2Includes the value of crude mercury ore shipped, amounting to less than 0.1 percent of the figure shown.

3Includes mercury metal produced by chemical extraction, amounting to less than 0.1 percent of the figure shown.

4Includes the value of ilmenite ore shipped, amounting to less than 1.0 percent of the total shown.

5Ilmenite concentrates represent about 86 percent of the total for titanium concentrates.

6Represents production or shipments and interplant transfers less minerals received for treatment from other establishments reported in the census.







December 1956

Series:

MI-11-1

ANTHRACITE

The value of shipments of the anthracite industry in the United States in 1954 amounted to \$366 million. Of this total, shipments of anthracite amounted to \$363 million, representing \$117 million for raw coal sold or transferred for preparation and \$246 million for prepared anthracite shipped from breakers, washeries; and dredges. The principal expenses of the industry included \$110 million for wages and salaries, \$120 million for raw anthracite received at breakers and washeries for preparation, \$20 million for supplies, \$10 million for purchased fuel and electric energy used, and \$50 million for contract work, principally stripping services. The cost of purchased machinery installed at these establishments was \$6 million. Employment in the industry averaged 31 thousand for the year. Capital expenditures for development work, construction, machinery, and equipment amounted to \$8 million. The total horsepower rating of equipment available for use in the industry was 1,074 thousand. Water intake for use during the year, including mine water, was 26 billion gallons.

The 1954 net shipments of anthracite represented a decline of about 45 percent from 1939, the year covered by the preceding Census of Mineral Industries. Employment declined by about 65 percent between these years, while the aggregate horsepower of power equipment increased by 5 percent.

All establishments in the United States that are classified in the anthracite industry are in eastern Pennsylvania. During 1954, underground or strip-pit mines and culm-banks were operated in 10 counties, and dredges were operated in 4 additional counties. However, 97 percent of the total value of shipments of the industry was accounted for by 5 counties. Ranked in order of value of shipments these counties were Luzerne, Schuylkill, Lackawanna, Northumberland, and Carbon, with Luzerne accounting for 38 percent of the total value of shipments and Schuylkill for 29 percent.

The anthracite industry, as defined in the Standard Industrial Classification, represents establishments primarily engaged in producing anthracite or in developing anthracite mines. This industry includes underground mines, stripping or culm—bank operations by owners, dredging operations, and coal preparation plants (breakers, washeries, and cleaning plants), whether or not operated in conjunction with the mines served. It excludes anthracite stripping and other contract services performed by establishments primarily engaged in such services. Separate statistics for these contract services have been published in the preliminary releases of this series: MI-10-8, Mining Contract Services, and MI-11-2, Anthracite Stripping Contract Services.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

Over 99 percent of all anthracite is prepared prior to use. In 1954, about 20 million tons of raw coal were mined and prepared at the same establishment, about 15 million were sold or transferred for preparation at other plants of the same company, and about 9 million tons were prepared at plants of other companies.

The statistics for net shipments, which exclude raw coal shipped for preparation, are shown by county in Table 2. These figures represent coal shipments based on the location of the breaker or washery preparing the coal rather than on the location of the mine, which may not be in the same county in which the coal is prepared.

The 1954 minerals census excludes establishments with value of shipments or expenditures for development work less than \$500. The Census, however, attempted to cover all operators of mine properties, whether or not they had employees, for which shipments or expenditures exceeded this amount. An analysis of the Census coverage indicated that the methods used in developing a mailing list and in collecting Census reports did not provide complete coverage of small mines with no employees, particularly in Schuylkill and Northumberland counties. Based upon receipts of coal for preparation by breakers and washeries, estimates have been prepared to account for these small establishments at which all of the work was performed by proprietors or partners.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Anthracite Mining," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) in order to minimize duplication in canvassing mineral establishments. The census report forms used for the anthracite industry also provided the information required by the Bureau of Mines for its annual statistics on anthracite.

(Excludes establishmenta for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.)

| | 1954 | 1939 | 1929 | 1919 |
|-----------------------------------------------------------------------------------|-------------------|----------------------|----------------|------------------|
| Net shipments of anthracite, total ² | 28,694 | 51,865 | 74,546 | 88,171 |
| Raw coal sold for use without preparationdo | 124 | 3490 | | 87,475 |
| Breaker and washery productdo Dredge productdo | 27,846 724 | 50,497 878 | 729 | 696 |
| Value of shipments, total\$1,000 | 365,536 | (NA) | (NA) | 364,084 |
| Raw coal sold or transferred for preparationdo | 4117,023 | (NA) | (NA) | ⁵ 433 |
| Net shipments, total | 248,513 | 189,648 | 384,854 | 363,651 |
| Raw coal sold for use without preparationdo | 156 | ³ 443 | 383,927 | 362,619 |
| Breakar and washery productdodo | 244,296 1,804 | 188,118 871 | 827 | 893 |
| Other products and servicesdo | 2,257 | 216 | 100 | 139 |
| Value added in mining ⁶ do | 167,452 | 146,419 | 320,756 | 289,049 |
| Number of employeea, total ⁷ | 31,212 | 85,713 | 151,171 | 154,723 |
| Production and development workers | 28,823 | 80,429 | 142,801 | 147,372 |
| All other employeea | 2,389 | 5,284 | 8,370 | 7,351 |
| Man-hours worked by production and development workers, total1,000 | 42,061 | ⁸ 120,085 | (NA) | (NA) |
| Undergrounddo | 27,846 | 94,421 | (NA) | (NA) |
| Strip-pit and culm-bank ¹ do Preparation plantdo | 1,669 6,103 | 1,502 11,543 | (NA) (NA) | (NA) (NA) |
| Shops, yards, and all other surfacedo | 6,207 | 11,948 | (NA) | (NA) |
| Dredgedo | 236 | 532 | (NA) | (NA) |
| Principal expenses, total\$1,000 | 310,182 | ⁹ 159,089 | 9315,347 | 298,319 |
| Wages of production and development workersdo | 98,677 | 104,378 | 229,967 | 210,289 |
| Salaries of all other employeesdo | 11,204 | 11,482 | 21,282 | 12,995 5433 |
| Raw coal received for preparation ⁴ dodo | 119,656 19,873 | (NA) 22,496 | (NA) 43,367 | 59,738 |
| Fueldo | 2,041 | 3,275 | 7,420 | 11,406 |
| Purchased electric energydo | 8,397 | 6,429 | 6,509 | 1,900 |
| Contract workdo | 50,334 | 11,029 | 6,802 | 1,558 |
| Purchased machinery installeddo | 5,667 | (NA) | 5,580 | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 7,884 | (NA) | (NA) | (NA) |
| For machinery and equipment onlydo | 4,298 | 2,195 | (NA) | (NA) |
| Horsepower rating of power equipment ¹⁰ | 1,074 | 1,019 | 1,041 | 900 |

NA Not available.

1 Excludes figures for stripping and other contractora. Statiatica for these contractors have been published in the preliminary reports, MI-10-8, winding Contract Services and MI-11-2, Anthracita Stripping Contract Services.

2 The "net" figures represent total shipmenta or production leas coal sold or transferred for preparation. These net figures, therefore, exclude the duplication in the total figures which include coal sold or transferred for preparation as well as the prepared coal recovered therefrom. Figures for years prior to 1954 represent production.

3 Represents coal sold or used run-of-mins or atored for preparation after 1939.

4 Tenjudge exceptions of the total sold or transferred for Northern transferred for the total sold or transferred for Parkers and the prepared coal sold or transferred for Parkers and the preparation of the total sold or transferred for Northern transferred for Parkers and Parkers and

Represents coal sold or used run-of-mins or stored for preparation after 1939.

Includes acreened coal sold or transferred for further preparation amounting to about two percent of the total.

Represents "cost of coal purchased as a material or for resale." It is not clear whether, as in 1954, this figure includes the estimated value of coal transferred by a company from its mines to a separately operated preparation plant and of coal received for custom preparation.

From 1954, represents value of products shipped plus capital expenditures, less cost of supplies, coal received for preparation, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, 1929, and 1919, represents value of products leas cost of supplies, fuel, purchased electric energy, and contract work (and for 1919 coal received). Thus, "value added," as computed for 1954, represents the value added during the year in the anthracite industry by mining and preparing anthracite, producing other products, performing aervices for others, and in the development of anthracite properties. development of anthracite properties.

*Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

*The total includes 139,000 man-hours worked at nonproducing operations on inactive days for which detail by department is not available.

*Excludes rew coal received for preparation.

*ORepresents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

| 18016 | Table 2PRINCIPAL STATISTICS FOR THE ANTHRACITE INDUSTRY, FOR COUNTIES: 1954 | | | | | | | | | |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------|----------------------------------|-----------------------|------------------------------------------|-------------------------------------------|----------------------------------------|-------------------------------------------|-------------|--------------------------------------------------------------------------|
| Item | Pennsyl- vania, totali | Carbon | Columbia | Dauphin | Lackawanna | Luzerne | Northumber- land | Schuylkill | Sullivan | Berks, Lancaster, Lebanon, Northampton, Snyder, and Wayne |
| Net shipments of anthracite, total ² 1,000 short tons | 28,694 | 1,251 | 381 | 148 | 3,347 | 10,235 | 3,892 | 8,795 | 20 | 625 |
| Raw coal sold for use without preparationdo Breaker and washery productdo Dredge productdo | 124 27,846 724 | 1,251 | } } 381 | { ioi 47 | 3,347 | 10,235 | 3,857 35 | 8,795 | { | } } 625 |
| Value of shipments, total\$1,000 | 365,536 | 11,365 | 8,325 | 1,223 | 52,203 | 139,052 | 45,033 | 106,794 | 148 | 1,393 |
| Raw coal sold or transferred for preparation ³ do | 117,023 | 1,502 | 4,583 | 318 | 17,808 | 40,302 | 14,741 | 37,765 | 148 | \ 1 |
| Net shipments, total ² do | 248,513 | 9,863 | 3,742 | 905 | 34,395 | 98,750 | 30,292 | 69,029 |] 140 | 1,392 |
| Raw coal sold for use without preparationdo Breaker and washery product.do Dredge productdo Other products and | 156 244,296 1,804 | 9,845 | 3,648 92 | 713 192 | 33,040 | 97,932 | {} 30,142 | 68,987 | { ;;; | 1,392 |
| services4do | 2,257 | 18 | 2 | | 1,355 | 818 | 22 | 42 | | ••• |
| Value added in mining ⁵ do | 167,452 | 7,154 | 3,892 | 595 | 24,300 | 70,308 | 16,446 | 43,481 | 122 | 1,154 |
| Number of employees, total ⁶ | 31,212 | 903 | 601 | 96 | 4,996 | 13,963 | 3,081 | 7,416 | 34 | 122 |
| Production and development workers All other employees | 28,823 2,389 | 834 69 | 564 37 | 88 8 | 4,421 575 | 12,763 1,200 | 2,976 105 | 7,031 385 | 30 4 | 116 6 |
| Man-hours worked by production and development workers, total1,000 | 42,061 | 1,370 | 964 | 149 | 5,726 | 19,791 | 3,910 | 9,847 | 46 | 258 |
| Underground | 27,846 1,297 372 6,103 | 826 20 9 272 | 556 93 3 203 | 16 3 95 | 4,091 149 47 577 | 14,915 212 107 1,745 | 2,458 35 4 784 | 4,950 787 199 2,326 | 34 1 | 93 |
| surfacedodo | 6,207 236 | 243 | 100 9 | 35 | 862 | 2,807 5 | 607 22 | 1,585 | 3 | 165 |
| Principal expenses, total\$1,000 | 310,182 | 8,097 | 6,732 | 868 | 44,503 | 121,460 | 38,271 | 89,489 | 121 | 641 |
| Wages of production and development workersdo | 98,677 | 3,436 | 2,008 | 237 | 13,815 | 46,725 | 9,041 | 22,918 | 82 | 415 |
| employeeado | 11,204 | 349 | 191 | 18 | 2,557 | 5,533 | 629 | 1,879 | , 13 | 35 |
| preparation ³ do Supplies do Puel do Contract work do Go | 119,656 19,873 2,041 8,397 50,334 | 993 537 19 421 2,342 | 3,041 361 28 217 886 | 499 55 45 13 | 21,142 1,975 537 1,054 3,423 | 39,172 8,136 250 3,001 18,643 | 19,642 2,683 331 884 5,061 | 35,150 6,011 768 2,791 19,972 | } 18 | 114 59 12 6 |
| Purchased machinery installeddo | 5,667 | 67 | (D) | 95 | 589 | 2,935 | 369 | 1,316 | | (D) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 7,884 | 168 | (D) | 80 | 817 | 3,393 | 383 | 2,695 | | (D) |
| For machinery and equipment onlydo | 4,298 | 69 | (D) | 80 | 373 | 2,075 | 207 | 1,245 | | (D) |
| Horsepower rating of power equipment ⁸ ,000 | 1,074 | 83 | 19 | 6 | 160 | 456 | 93 | 250 | 1 | 6 |
| Water intake91,000,000 gallons | 26,456 | 1,323 | 282 | 324 | 2,979 | 9,266 | 4,415 | 6,591 | 1 | 1,275 |

D Withheld to avoid approximately disclosing figures for individual companies.

All establishments in the United States that are classified in this industry are in Pennsylvania.

See table 1, footnote 2.

See table 1, footnote 4.

For a description of the producta and services included, see table 3.

See table 1, footnote 6.

See table 1, footnote 7.

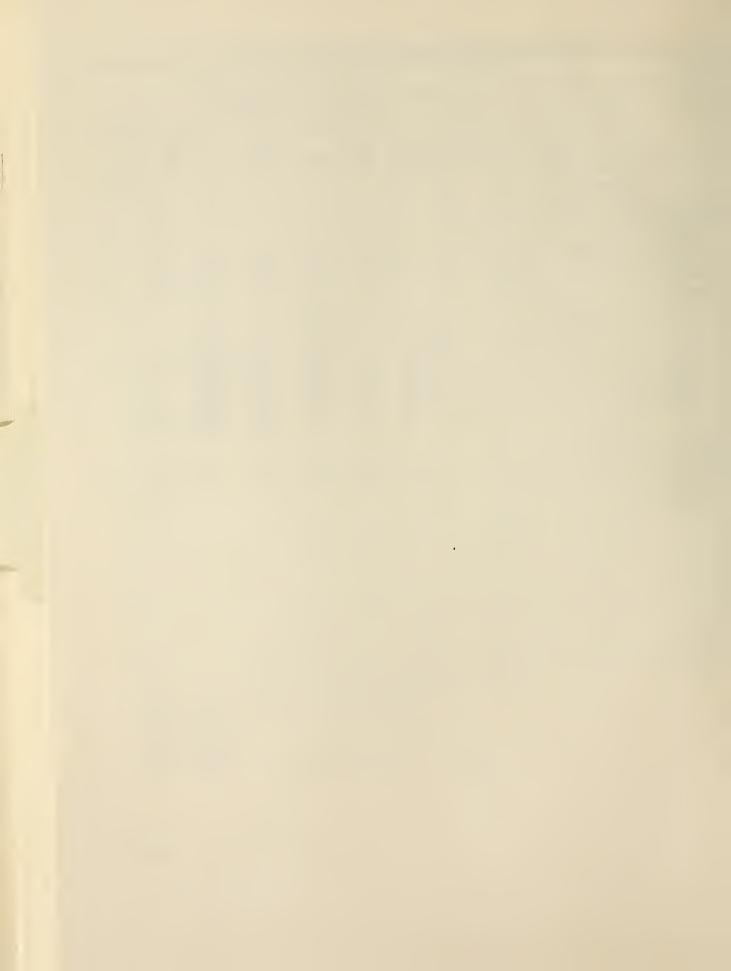
Fose table 1, footnote 1.

See table 1, footnote 10.

Represents total water intake from publicly and privately owned systems, and mine water used.

| | | | 19 | 954 | | | | |
|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------|-----------|
| Product | Total shipped, within sold, or used region | | Sold to lo within an region or emplo | thracite used by | Shipped by rail and by truck outside anthracite region or put in storage | | 1939 production | |
| | Quantity | Value | Quantity | Value | Quantity | Value | Quantity | Value |
| | (1,000 short tons) | (\$1,000) | (1,000 short tons) | (\$1,000) | (1,000 short tons) | (\$1,000) | (1,000 short tons) | (\$1,000) |
| All products and services, total | XXX | 365,536 | xxx | xxx | xxx | xxx | xxx | 1189,648 |
| PRIMARY PRODUCTS | | | | | | | | |
| Raw coal sold for use without preparation | 124 | 156 | xxxx | xxx | xxxx | xxx | 490 | 443 |
| establishment | ² 20,275 | xxx | xxxx | xxx | XXXX | xxx | 66,238 | (NA) |
| Raw coal sold or transferred: For preparation at other plants of same company For preparation at plants of other companies | 14,852 8,829 | 73,825 41,037 | XXX | xxx | XXX XXX | xxx | 4,336 | (NA) |
| Screenings sold for further processing | 495 34 | 2,161 xxx | XXX | XXX | XXX | xxx xxx | (NA) | (NA) |
| Prepared coal: For use for power and heat | 560 | xxx | xxx | xxx | xxx | xxx | } | |
| For shipment, sale, or employee use, total | 28,570 | 246,100 | 3,845 | 33,764 | 24,725 | 212,336 | | |
| Lump and broken. Egg Stove. Chestnut. Pea. Buckwheat no. 1 Buckwheat no. 2 Buckwheat no. 3 Buckwheat no. 4 Silt. Other. | 82 350 4,878 5,509 3,071 3,717 2,523 3,348 1,939 1,912 1,241 | 1,018 4,199 60,025 66,623 29,652 30,773 18,180 18,264 7,613 6,266 3,487 | 32 4 171 548 1,091 605 466 423 171 187 147 | 391 54 2,033 6,967 11,427 5,413 3,514 2,329 624 534 478 | 50 346 4,707 4,961 1,980 3,112 2,057 2,925 1,768 1,725 1,094 | 627 4,145 57,992 59,656 18,225 25,360 14,666 15,935 6,989 5,732 3,009 | 51,376 | 188,989 |
| Electric energy generated and sold; steam sold; crushed stone, sand, and cinders shipped; and receipts for services | xxx | 2,257 | xxx | xxx | xxxx | xxx | xxx | 216 |

NA Not available. ¹Represents "net production," see table 1, footnote 2. ²Represents production.



November 1955 Series: MI-11-2

ANTHRACITE STRIPPING CONTRACT SERVICES

Receipts for services by the anthracite stripping contract services industry in 1954 amounted to \$42 million. The principal expenses of the industry included \$17 million for wages and salaries, \$9 million for supplies, \$2 million for fuel and electric energy, and \$1 million for subcontract work. The cost of purchased machinery installed was \$4 million. Employment in the industry averaged 4,565 for the year. Capital expenditures for new construction and new and used machinery amounted to \$3 million. The total horsepower of equipment available for use in the industry was 394 thousand.

The 1954 tonnage of raw anthracite mined by contractors at strip pits represents an increase of over 60 percent since 1939, the year covered by the preceding Census of Mineral Industries. The quantity of culm-bank material handled by contractors decreased by nearly 10 percent in the same period. Employment in the industry increased by over 70 percent between 1939 and 1954, and horsepower of power equipment increased nearly sixfold.

Establishments primarily engaged in contract strip mining of fresh and culm-bank anthracite performed such services in seven counties in eastern Pennsylvania. Almost half of the strip-pit coal and more than half of the culm-bank material mined on contract was produced in Schuylkill and Dauphin counties.

The anthracite stripping contract services industry represents establishments primarily engaged in contract strip mining of fresh or culm-bank anthracite. This definition is in accordance with the Standard Industrial Classification of the Bureau of the Budget (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949). Approximately 99 percent of the total receipts by the industry in 1954 was for such strip-pit and culm-bank work, with the remainder for hauling, test drilling, and other miscellaneous services for the anthracite industry.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Anthracite Mining," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases will be issued for other industries within the next few months.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) to minimize duplication in canvassing mineral establishments. The census report form used for the anthracite stripping contract services industry also provided the information required by the Bureau of Mines for its annual statistics on these services.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

Table 1.--PRINCIPAL STATISTICS FOR THE ANTHRACITE STRIPPING CONTRACT SERVICES INDUSTRY IN THE UNITED STATES: 1954 AND 1939 (Excludes establishments for 1954 with receipts for services and with expenditures less than \$500; and for 1939, less than \$2,500.)

| Item | 1954 | 1939 |
|--------------------------------------------------------|--------------|------------------|
| Quantity of raw coal produced | | |
| Fresh-mined anthracite | 11,880 | 7,249 |
| Culm bank materialdodo | 4,530 | 4,909 |
| Amount received or due for services, total\$1,000 | 42,337 | 10,936 |
| Stripping overburden and fresh-mined anthracitedo | 38,599 | 1 |
| Recovering culm bank anthracitedo | 3,384 | 10,562 |
| Other workdo | 354 | 374 |
| Value added in mining services ¹ do | 29,417 | 7,126 |
| Number of employees, total ² | 4,565 | 2,646 |
| Production and development workers | 4,106 | 2,461 |
| All other employees | 459 | 185 |
| Man-hours worked by production and development workers | 6,054 | 4,038 |
| Principal expenses, total\$1,000 | 29,487 | 7,72' |
| Wages of production and development workersdo | 14,920 | 3,166 |
| Salaries of all other employeesdo | 2,556 | [^] 749 |
| Suppliesdo | 8,680 | 2,956 |
| Fueldo | 1,876 | 619 |
| Purchased electric energydo Subcontract workdo | 394 1,061 | 94 141 |
| Subcontract workdo | 1,001 | 141 |
| Purchased machinery installeddo | 3,668 | (NA) |
| Capital expenditures (construction. | | |
| machinery, and equipment)do | 2,759 | (NA) |
| For machinery and equipment onlydo | 2,665 | 1,000 |
| Horsepower rating of power equipment ³ | 394 | 71 |

NA Not available.

Table 2.--RAW COAL PRODUCED AND MAN-HOURS WORKED IN THE ANTHRACITE STRIPPING CONTRACT SERVICES INDUSTRY IN THE UNITED STATES, BY COUNTY: 1954

| | Raw coal produced (| Man-hours | | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------|------------------------------------------------------|--|
| County | Fresh-mined anthracite | Culm-bank material | worked by production and development workers (1,000) | |
| ALL COUNTIES, TOTAL | 11,880 | 4,530 | 6,054 | |
| Pennsylvania Carbon Lackawanna. Luzerne. Northumberland and Columbia. Schuylkill and Dauphin. | 1,009 775 3,236 1,576 5,284 | } 475 | { 363 532 1,632 795 2,732 | |

Not available.

1 For 1954, represents receipts for services plus capital expenditures less cost of supplies, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, represents receipts for services less cost of supplies, fuel, purchased electric energy, and contract work.

2 Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

3 Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.





January 1956

Series:

MI-12-1

BITUMINOUS COAL AND LIGNITE

The value of shipments of the bituminous coal and lignite industries in the United States amounted to approximately \$2 billion in 1954. Of this total, shipments of bituminous coal amounted to \$2.03 billion, representing \$0.26 billion for raw coal sold or transferred for mechanical cleaning and for resale within the industry and \$1.77 billion for net shipments of coal to consumers in other industries. Net shipments of lignite amounted to \$10 million and secondary products and services amounted to only \$4 million. The principal expenses for operations in the two industries included \$845 million for wages and salaries, \$265 million for raw coal received for mechanical cleaning or for resale, \$258 million for supplies, \$64 million for purchased fuel and electric energy used, and \$54 million for contract work. The cost of purchased machinery installed during the year was \$119 million. Employment in these industries averaged 214 thousand for the year. Capital expenditures for development work, construction, machinery, and equipment amounted to \$116 million. The total horsepower of equipment available for use was 6.4 million. Water intake for use during the year, including mine water, was 32 billion gallons.

The production of bituminous coal in 1954 was about one percent less than in 1939, the year covered by the preceding Census of Mineral Industries. Production of lignite in the same period increased by about two-fifths. Employment in the two industries combined declined by about 45 percent between these years, while the aggregate horsepower of power equipment almost doubled.

Establishments in the bituminous coal and lignite industries were operated in 28 States and in Alaska. The value of shipments of the bituminous coal industry exceeded \$100 million in 1954 for each of 5 States. Ranked in order of value of shipments, these States were West Virginia, Pennsylvania, Kentucky, Illinois, and Ohio. Three of these States accounted for 66 percent of the total United States value of shipments for these industries, with West Virginia accounting for 31 percent; Pennsylvania, 22 percent; and Kentucky, 13 percent. In three other States, Virginia, Indiana, and Alabama, the value of shipments was between \$50 million and \$100 million.

As defined in the Standard Industrial Classification, the bituminous coal industry represents establishments primarily engaged in producing bituminous coal or in developing bituminous coal mines. Subbituminous and semianthracite mining operations are also included. This industry includes mines and coal cleaning or sizing plants, whether or not operated in conjunction with the mines served. Similarly, the lignite industry represents establishments primarily engaged in producing lignite or in developing lignite mines. These industries exclude coal stripping on contract and other contract services performed by establishments primarily engaged in performing such services. Separate statistics for these contract services have been published in the preliminary release of this series: MI-10-8, Mining Contract Services.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

The following tables include figures on total value of shipments of the coal industries and on coal production and net coal shipments. The tonnage figures on production, shown in Table 2 by State, are based on the clean coal equivalent of the coal for the State in which the coal was mined. These figures are comparable to the figures published annually by the Bureau of Mines. The tonnage figures on net shipments, which exclude raw coal shipped for mechanical cleaning, are based on the location of the coal as it left the bituminous coal industry. The differences between the State figures for production and net shipments are largely accounted for by interstate transfers of coal for mechanical cleaning. The figures for net value of coal shipments represent the value of coal as it left the industry. The total value of shipments for the bituminous coal and lignite industries includes, in addition, the value of coal sold for mechanical cleaning within these industries, the value of coal sold for resale without mechanical cleaning within these industries, and the value of other products and services.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Bituminous Coal and Lignite Mining," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary releases have been issued for other industries and similar final releases are now being issued.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) in order to minimize duplication in canvassing mineral establishments. The census report forms used for the bituminous coal and lignite industries also provided the information required by the Bureau of Mines for its annual statistics on bituminous coal and lignite.

Table 1.--PRINCIPAL STATISTICS FOR THE BITUMINOUS COAL AND LIGHTIE INDUSTRIES IN THE UNITED STATES: 1954, 1939, 1929, AND 1919

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, with production less than 1,000 tons and expenditures less than \$2,500; and for 1919, with production less than 1,000 tons and cost of development less than \$5,000¹)

| | | 1954 | | | 1939 | | Bituminous lignite i | |
|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------|--------------------------|-------------------------------------------------|--------------------------------------------|--------------------------------|---------------------------------------------|----------------------------------------------|
| Item | Bituminous coal and lignite industries | Bituminous coal industry | Lignite industry | Bituminous coal and lignite industries | Bituminous coal industry | Lignite industry | 1929 | 1 919 |
| Net production of bituminous coal and lignite, total ² l,000 short tons clean coal equiv | 391,251 | 387,006 | 4,245 | 394,707 | 391,729 | 2,978 | 537,443 | 460,426 |
| From underground operationsdo. From strip pit operationsdo. From auger operations ³ do. | 289,122 97,660 4,469 | 289,074 93,463 4,469 | 48 4,197 | 356,984 37,723 | 355,426 36,303 | 1,558 1,420 | 516,260 21,183 | 454,651 5,775 |
| Net shipments of bituminous coal and lignite ² do | 391,269 | 387,030 | 4,239 | (NA) | (NA) | (NA) | (NA) | (NA) |
| Value of shipments, total\$1,000 | 2,046,546 | 2,036,159 | 10,387 | (NA) | (NA) | (NA) | (NA) | 1,145,978 |
| Raw coal sold or transferred for mechanical cleaning and for resale in the bituminous coal industrydo | 261,593 | 261,593 | | (NA) | (NA) | (NA) | (NA) | |
| Net shipments, total ² do | 1,784,953 | 1,774,566 | 10,387 | 730,815 | 727,358 | 3,457 | 966,694 | 1,145,978 |
| Coal net shipments ² do Other products and servicesdo | 1,780,488 4,465 | 1,770,158 4,408 | 10,330 57 | 727,931 2,884 | 724,476 2,882 | 3,455 2 | 965,707 987 | 1,144,323 1,655 |
| Value added in mining ⁴ do | 1,402,484 | 1,393,391 | 9,093 | 610,197 | 607,318 | 2,879 | 819,976 | 962,833 |
| Number of employees, total ⁵ | 214,386 | 213,812 | 574 | 390,550 | 388,955 | 1,595 | 482,521 | 579,895 |
| Production and development workers | 198,513 15,873 | 198,008 15,804 | 505 69 | 370,745 19,805 | 369,265 19,690 | 1,480 115 | 458,835 23,686 | 546,269 33,626 |
| Man-hours worked by production and development workers, total | 323,315 | 322,414 | 901 | ⁶ 545,337 | ⁶ 542,310 | 63,027 | (NA) | (NA) |
| Underground (mining and development)dododododododo | 233,904 25,545 1,193 | 233,863 25,003 1,193 | 41 542 | 436,853 13,190 | 435,059 12,604 | 1,794 586 | (NA) (NA) | (NA) (NA) |
| mine shops, yards, and auxiliary units)do | 62,673 | 62,355 | 318 | 74,579 | 74,007 | 572 | (NA) | (NA) |
| Principal expenses, total\$1,000 | 1,486,697 | 1,482,773 | 3,914 | 7596,968 | 7594,787 | 72,181 | 7780,284 | 935,086 |
| Wages of production and development workersdo Salaries of all other employeesdo Raw coal received for mechanical cleaningdo | 757,842 87,503 221,256 | 755,665 87,092 221,256 | 2,177 411 | 431,948 44,402 (NA) | 430,564 44,183 (NA) | 1,384 219 (NA) | 574,919 58,647 (NA) | 683,192 68,749 |
| Raw coal received for resale without mechanical cleaningdo. Suppliesdo Fueldo Purchased electric energydo Contract workdo | 44,036 257,882 15,972 47,763 54,433 | 44,036 257,255 15,733 47,509 54,227 | 627 239 254 206 | (NA) 88,435 5,379 24,894 1,910 | (NA) 88,093 5,299 24,749 1,899 | (NA) 342 80 145 11 | (NA) 106,560 7,529 30,739 1,890 | (NA) 143,084 25,901 11,291 2,869 |
| Purchased machinery installeddo | 119,082 | 118,475 | 607 | (NA) | (NA) | (NA) | 34,947 | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 116,362 | 115,723 | 639 | (NA) | (NA) | (NA) | (NA) | (NA) |
| For machinery and equipment onlydo | 78,742 | 78,252 | 490 | 25,398 | 25,304 | 94 | (NA) | (NA) |
| Horsepower rating of power equipment 8 | 6,397 | 6,316 | 81 | 3,365 | 3,344 | 21 | 3,125 | 2,158 |

NA Not available.

1Excludes figures for stripping and other contractors. Statistics for these contractors have been published in the preliminary report, MI-10-8, Mining Contract Services.

Mining Contract Services.

The "net" figures represent total shipments or production less coal sold or transferred for preparation or for resale at other establishments in the bituminous coal and lignite industries. These net figures, therefore, exclude the duplication in the total figures which include coal sold or transferred for preparation or resale as well as the prepared coal covered therefore and the coal resold. Figures for 1929 and 1919 represent broduction for sale. Figures for 1929 and 1919 represent production for sale. Figures for 1929 and 1919 represent production. For 1954, in addition to coal produced in the bituminous coal and lignite industries, 179 thousand tons of coal were produced as a secondary product in other mining industries, or by government institutions. Of this total, 44 thousand tons were from underground operations and 135 thousand tons from strip pit operations.

Fixcludes underground auger mining.

For 1954, represents value of products shipped, plus capital expenditures, less cost of supplies, coal received for preparation or resale, purchased electric energy, contract work, and purchased machinery installed; for 1939, 1929, and 1919 represents value of products less cost of supplies, purchased fuel, purchased fuel, purchased electric energy, and contract work. Thus, "value added," as computed for 1954, represents the value added during the year in the bituminous coal and lignite industries by mining and cleaning coal, producing other products, performing services for others, and in the development of bituminous coal and lignite properties.

added during the year in the blumihous coal and lightle industries by mining and cleaning coal, producing other products, performing services others, and in the development of bituminous coal and lightle properties.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

For bituminous coal the total includes 20,640 thousand man-hours, and for lightle 75 thousand man-hours, worked on inactive days when only watchmen, maintenance men, and repairmen were on duty. Detail by department for these man-hours are not available.

Excludes coal received for cleaning or resale, but these items were relatively much smaller in years prior to 1954.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

| Line | | Bituminous coal and lignite | Bituminous coal industry | | | |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--|
| no. | Item | industries (United States and Alaska), total | United States and Alaska, total | United States, | Middle Atlantic (Pennsylvania) | |
| 1 | Net production of bituminous coal and lignite, total ² | 391,919 | 387,674 | 387,007 | 72,080 | |
| 2 3 4 | From underground operations. do. From strip pit operations. do. From auger operations ² do. | 289,396 98,054 4,469 | 289,348 93,857 4,469 | 289,074 93,464 4,469 | 55,131 16,699 2 5 0 | |
| 5 | Net shipments of bituminous coal and lignite ² do | 391,932 | 387,693 | 387,030 | 71,770 | |
| 6 | Value of shipments, total\$1,000 | 2,053,130 | 2,042,743 | 2,036,159 | 446,549 | |
| 7 | Raw coal sold or transferred for mechanical cleaning and for resale in the bituminous coal industrydo | 2,053,130 | 2,042,743 | 261,593 | 63,767 | |
| 8 | Net shipments, total ² do | | | 1,774,566 | 382,782 | |
| 9 10 | Coal net shipments | 1,786,933 (D) | 1,776,603 (D) | 1,770,158 4,408 | 381,166 1,616 | |
| 11 | Value added in mining ⁴ do | 1,408,261 | 1,399,168 | 1,393,391 | 294,931 | |
| 12 | Number of employees, total ⁵ | 214,759 | 214,185 | 213,812 | 49,431 | |
| 13 14 | Production and development workers | 198,828 15,931 | 198,323 15,862 | 198,008 15,804 | 45,663 3,768 | |
| 15 | Man-hours worked by production and development workers, total1,000 | 324,003 | 323,102 | 322,414 | 73,139 | |
| 16 17 18 19 | Underground (mining and development) | 234,255 25,724 1,193 | 234,214 25,182 1,193 | 233,863 25,003 1,193 62,355 | 53,836 6,618 96 | |
| 20 | and auxiliary units)do Principal expenses, total | 62,831 | 62,513 | 1,482,773 | 339,560 | |
| } | | | | | | |
| 21 22 23 24 25 26 2 7 28 | Wages of production and development workers. .do Salaries of all other employees. .do Raw coal received for mechanical cleaning. .do Raw coal received for resale without mechanical cleaning. .do Supplies. .do Fuel. .do Purchased electric energy .do Contract work .do | 760,326 88,129 221,377 44,036 258,514 16,185 47,820 54,815 | 758,149 87,718 221,377 44,036 257,887 15,946 47,566 54,609 | 755,665 87,092 221,256 44,036 257,255 15,733 47,509 54,227 | 173,135 21,261 55,030 8,188 49,289 4,623 10,914 17,120 | |
| 29 | Purchased machinery installeddo | 119,760 | 119,153 | 118,475 | 27,479 | |
| 30 | Capital expenditurea (development work, construction, machinery, and equipment)do | 117,638 | 116,999 | 115,723 | 21,025 | |
| 31 | For machinery and equipment onlydo | 79,205 | 78 , 715 | 78,252 | 15,088 | |
| 32 | Horsepower rating of power equipment ⁶ | 6,412 | 6,331 | 6,316 | 1,715 | |
| 33 | Water intake ⁷ Million gallons | 31,773 | 31,749 | 30 , 867 | 4,935 | |

See footnotes at end of table.

| | | | Bitumi | nous coal indus | tryContinue | d . | | · | | Lin |
|-------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------|-------------------------------------------------------|-------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------|-------|
| Eas | t North Central | | Wes | t North Central | 1 | | South | Atlantic | | no |
| Ohio | Indiana | Illinois | Iowa | Missouri | Kansas | Maryland | Virginia | West Virginia | Georgia | |
| 32,438 | 13,378 | 41,974 | 1,198 | 2,524 | 1,377 | 431 | 16,476 | 116,202 | 9 | 1 |
| 10,962 20,522 954 | 4,888 8,490 | 25,520 16,454 | 338 860 ••• | 158 2,366 | 26 1,351 | 237 194 | 15,395 913 168 | 106,249 7,490 2,463 | 9 | 2 3 4 |
| 32,522 | 16,032 | 41,899 | 1,198 | 2,791 | 1,104 | 431 | 15,171 | 117,939 | 9 | 5 |
| 130,254 | 69,313 | 179,919 | 4,544 | 12,155 | 6,679 | 2,119 | 99,078 | 636,928 | 43 | 6 |
| 10,896 | 3,207 | 19,859 | 11 | 12,155 | 6,679 | 108 | 28,115 | 78,993 | | 7 |
| 119,358 | 66,106 | 160,060 | 4,533 |] | | 2,011 | 70,963 | 557,935 | 43 | 8 |
| 119,104 | 65,719 387 | 160,038 | 4,510 23 | 10,846 (D) | 4,718 (D) | 1,942 69 | 70 , 894 69 | 556,893 1,042 | 43 | 9 |
| 90,156 | 39,588 | 129,161 | 3,556 | 7,644 | 4,271 | 1,631 | 61,511 | 431,034 | 33 | 1 |
| 10,834 | 4,609 | 14,572 | 602 | 841 | 497 | 371 | 11,392 | 66,779 | 8 | 1 |
| 10,015 | 4,153 456 | 13,491 1,081 | 562 40 | 781 60 | 423 74 | 352 19 | 10 , 730 662 | 61,684 5,095 | | 1 |
| 17,910 | 6,764 | 21,988 | 991 | 1,364 | 721 | 562 | 17,324 | 102,276 | 15 | 1 |
| 7,951 5,743 174 | 2,935 1,726 | 12,702 2,553 | 461 341 | 325 570 | 53 429 | 372 132 | 13,634 382 49 | 80,770 2,460 719 | 15 | 1 1 |
| 4,042 | 2,103 | 6,733 | 189 | 469 | 239 | 58 | 3,259 | 18,327 | | 1 |
| 84,609 | 49,755 | 113,773 | 2,634 | 7,376 | 4,771 | 1,535 | 75,677 | 489,013 | 29 | 2 |
| 41,181 4,521 10,314 1,499 17,450 3,339 2,315 3,990 | 17,663 2,455 18,418 2 8,728 465 1,841 183 | .355,958 6,063 19,831 53 22,754 777 5,692 2,645 | 1,549 149 11 428 195 86 216 | 2,874 434 2,059 3 1,329 128 536 | 1,770 535 1,183 792 109 224 158 | 1,003 70 108 223 80 23 28 | 34,763 2,139 10,138 12,098 12,006 429 1,714 2,390 | 251,318 28,954 73,700 13,770 85,449 2,807 14,272 18,743 | 19 10 | 22 |
| 8,720. | 6,849 | 10,664 | 471 | 724 | 256 | 171 | 3,524 | 39,612 | | 2 |
| 7,529 | 6,761 | 11,658 | 419 | 281 | 314 | 145 | 4,732 | 42,459 | | 3 |
| 6,502 | 5,636 | 5,950 | 383 | 243 | 137 | 137 | 3,019 | 26,377 | | 3 |
| 521 | 246 | 594 | 39 | 67 | 66 | 16 | 215 | 1,543 | | 3 |
| 892 | 2,169 | 4,786 | | 524 | 155 | | 1,848 | 7,909 | | 1 |

| | | Bituminous | s coal industry(| Continued |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------|
| Line no. | Item | East So | outh CentralCont | inued |
| | | Kentucky | Tennessee | Alabama |
| 1 | Net production of bituminous coal and lignite, total ² | 56,791 | 6,447 | 10,287 |
| 2 3 4 | From underground operations | 45,410 10,784 597 | 4,921 1,489 37 | |
| 5 | Net shipments of bituminous coal and lignite ² do | 53,985 | 6,331 | 10,537 |
| 6 | Value of shipments, total\$1,000 | 267,465 | 26,462 | 68,713 |
| 7 | Raw coal sold or transferred for mechanical cleaning and for resale in the bituminous coal industrydo | 45,037 | 1,013 | 4,304 |
| 8 | Net shipments, total ² do | 222,428 | 25,449 | 64,409 |
| 9 10 | Coal net shipmentsdododododododo | 222 , 297 131 | 25 , 446 3 | 64,345 64 |
| 11 | Value added in mining4do | 193,098 | 20,837 | 51,029 |
| 12 | Number of employees, total ⁵ | 31,405 | 4,113 | 8,589 |
| 13 14 | Production and development workers. All other employees. | 29,410 1,995 | 3 , 961 152 | 7,812 777 |
| 15 | Man-hours worked by production and development workers, total | 47 , 333 | 6,325 | 12,296 |
| 16 17 18 19 | Underground (mining and development) | 37,097 1,927 155 8,154 | 4,965 599 761 | 9,209 658 2,429 |
| 20 | Principal expenses, total | 189,857 | 18,651 | 48,912 |
| 21 22 23 24 25 26 27 28 | Wages of production and development workers | 103,751 10,108 22,711 7,484 35,172 1,352 5,537 3,742 | 12,201 768 186 702 3,449 419 319 | 26,443 5,320 4,620 67 8,599 480 2,031 1,352 |
| 29 | Purchased machinery installeddo | 9,933 | 1,122 | 5,303 |
| 30 | Capital expenditures (development work, construction, machinery, and equipment)do | 11,564 | 1,179 | 4,768 |
| 31 | For machinery and equipment onlydo | 8,354 | 1,019 | 2,851 |
| 32 | Horsepower rating of power equipment ⁶ | 561 | 84 | 231 |
| 33 | Water intake ⁷ | 4,755 | 30 | 1,845 |

D Withheld to avoid approximately disclosing figures of individual companies. $^{\rm 1}$ Represents establishments in North Dakota, South Dakota, Texas, Montana, and California. $^{\rm 2}$ See Table 1, footnote 2. $^{\rm 3}$ See Table 1, footnote 3.

| Bituminous coal industryContinued | | | | | | | | | | | | |
|-----------------------------------|-------------------------------------------------|-------------------------------------------------------|------------------------------------------|-----------------------------------------------|-------------------------------------------------|-------------------------------------------|---------------------|------------------------------------------------------------|---------------------------------------------------|----------------------------------------------------|----------------------------------------------|----------------------------------------------|
| . 1 | West Sout | h Central | | | Mour | ıtain | | | Pacific | | Lignite industry ¹ | Line no. |
| A | rkansas | Oklahoma | Montana | Wyoming | Colorado | New Mexico | Arizona | Utah | (Washington and Oregon) | Alaska | | |
| | 480 | 1,917 | 1,492 | 2,834 | 2,907 | 125 | 11 | 5,009 | 620 | 667 | 4,245 | 1 |
| | 255 225 | 741 1,176 | } 1,492 | 2,834 | { 2,610 297 | } 125 | { !! | 5,009 | 561 59 | 274 393 | 48 4,197 | 2 3 4 |
| | 480 | 1,915 | 1,489 | 2,756 | 2,922 | 122 | 11 | 4,997 | 619 | ,663 | 4,239 | 5 |
| | 3,692 | 12,069 | 4,158 | 11,822 | 15,983 | 732 | 68 | 32,924 | 4,490 | 6,584 | 10,387 | 6 |
| | 50 | 12,069 | { … | | · | 1 | ••• | 32,924 | 4,490 | 6,584 | { | 7 |
| | 3,642 | ļ | 4,158 | 11,822 | 15,983 | 731 | 68 | | | | 10,387 | 8 |
| | 3,641 1 | 11,803 (D) | 4 , 158 | 11,239 583 | 15,937 46 | 731 | 68 | 30,154 (D) | 4,466 (D) | 6,445 (D) | 10,330 57 | 9 10 |
| | 2,783 | 8,854 | 2,906 | 8,867 | 13,479 | 614 | 59 | 24,020 | 3,329 | 5,777 | 9,093 | 11 |
| | 460 | 1,165 | 338 | 1,222 | 2,618 | 159 | 21 | 3,086 | 700 | 373 | 574 | 12 |
| | 429 31 | 1,112 53 | 290 48 | 1,138 84 | 2,431 187 | 147 12 | 21 | 2,735 351 | 660 40 | 315 58 | 505 69 | 13 14 |
| | 668 | 1,926 | 398 | 1,590 | 3,229 | 225 | 28 | 4,351 | 991 | 688 | 901 | 15 |
| | 433 116 | 1,183 437 | 268 7 | 953 202 | 2,581 68 | 158 14 | 23 | 3,249 | 690 21 | 351 179 | 41 542 | 16 17 18 |
| | 119 | 306 | 123 | 435 | 580 | 53 | 5 | 1,102 | 280 | 158 | 318 | 19 |
| | 2,485 | 7,583 | 2,324 | 7,235 | 11,545 | 497 | 36 | 20,975 | 3,941 | 4,515 | 3,914 | 20 |
| | 1,566 119 50 594 43 96 17 | 4,238 257 206 1,924 162 223 573 | 868 200 197 13 66 980 | 3,916 379 1,789 82 212 857 | 7,928 1,007 1,957 78 430 145 | 350 28 1 47 6 37 28 | 27 9 | 10,533 2,158 2,799 4,271 104 814 296 | 2,611 167 61 789 42 127 144 | 2,484 626 121 632 213 57 382 | 2,177 411 627 239 254 206 | 21 22 23 24 25 26 27 28 |
| | 190 | 346 | 228 | 70 | 437 | 25 | | 2,309 | 42 | 678 | 607 | 29 |
| | 81 | 219 | 232 | 55 | 543 | 26 | | 1,689 | 44 | 1,276 | 639 | 30 |
| | 68 | 211 | 210 | 53 | 410 | 20 | | 1,545 | 39 | 463 | 490 | 31 |
| | 20 | 60 | 16 | 116 | 77 | 10 | | 92 | 27 | 15 | 81 | 32 |
| | 10 | 296 | 6 | 160 | 84 | 4 | | 244 | 215 | 882 | 24 | 32 |

^{*}See Table 1, footnote 4.
*See Table 1, footnote 5.
*See Table 1, footnote 8.
*Represents total water intake from publicly and privately owned systems, and mine water used.

| _ | TOTAL THE MINE IN COLUMN IN THE PRODUCT OF THE PROD | | | | | | | | | | | | |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------|--------------------------------------------------|----------------------------------------------------|--------------------------------------|----------------------------------|--------------------------------------|----------------------------|--|--|--|--|
| | | | Net coal fo | or shipment1 | | | Raw coal | 1 (1954) | | | | | |
| Line | Industry, geographic division, | 19 | 954 | 19 | 39 | Mined for s for use by | hipment or employees | Mined for o | cleaning at ablishments | | | | |
| no. | and State | Quantity ⁴ (1,000 short tons) | Value ⁵ (\$1,000) | Quantity (1,000 short tons) | Value (\$1,000) | Quantity (1,000 short tons) | Value (\$1,000) | Quantity (1,000 short tons) | Value (\$1,000) | | | | |
| 1 | Bituminous coal and lignite (United States and Alaska), total | 391,932 | 1,786,933 | (NA) | (NA) | (D) | (D) | (D) | (D) | | | | |
| 2 | United States and Alaska, total | 387,693 | 1,776,603 | (NA) | (NA) | (D) | (D) | (D) | (D) | | | | |
| 3 | United States, total | 387,030 | 1,770,158 | 6389,181 | ⁶ 719,680 | 158,858 | 676,840 | 59,019 | 217,557 | | | | |
| 4 | Middle Atlantic (Pennsylvania) | 71,770 | 381,166 | 92,095 | 186,617 | 33,407 | 152,200 | 14,737 | 55,579 | | | | |
| 5 6 7 8 | East North Central: Chio Indiana. Illinois. Michigan. | 32,522 16,032 41,899 | 119,104 65,719 160,038 | 20,192 16,789 46,059 430 | 32,967 24,876 75,494 1,621 | 18,689 2,614 6,981 | 63,471 10,052 24,704 | 3,334 1,354 7,666 | 9,397 3,205 19,806 | | | | |
| 9 10 11 | West North Central: Iowa Missouri Kansas | 1,198 2,791 1,104 | 4,510 10,846 4,718 | 2,936 3,243 2,661 | 7,160 6,081 5,032 | 1,198 202 164 | 4,506 1,003 773 | | 3,242 | | | | |
| 12 13 14 15 | South Atlantie: Maryland Virginia. West Virginia. Georgia | 431 15,171 117,939 9 | 1,942 70,894 556,893 43 | 1,435 13,506 107,999 (⁶) | 2,923 24,948 189,853 (6) | 431 7,852 43,534 | 1,923 32,317 191,473 43 | 4,559 15,864 | 16,017 65,223 | | | | |
| 16 17 18 | East South Central: Kentucky. Tennessee Alabama | 53,985 6,331 10,537 | 222,297 25,446 64,345 | 42,392 5,150 11,974 | 73,791 10,032 27,574 | 24,052 5,850 2,098 | 99,775 23,202 14,135 | 8,454 97 983 | 37,553 311 4,237 | | | | |
| 19 20 21 | West South Central: Arkansas. Oklahoma Texas. | 480 1,915 | 3,641 11,803 | 1,144 1,175 16 | 3,630 2,476 52 | 480 1,230 | 3,604 6,653 | (⁸) | (8) | | | | |
| 22 23 24 25 26 27 | Mountain: Montana Wyoming Colorado. New Mexico. Arizona Utah Pacific (Washington and Oregon). | 1,489 2,756 2,922 122 11 4,997 | 4,158 11,239 15,937 731 68 30,154 | 2,752 5,274 5,776 1,193 (6) 3,278 | 4,010 10,556 14,258 3,398 (6) 7,005 | } 4,221 } 2,874 11 2,933 | 15,245 15,849 68 15,685 | { { 8789 | 82,987 | | | | |
| 29 | Alaska | 663 | 6,445 | (NA) | (NA) | (D) | (D) | (D) | (D) | | | | |
| | LIGNITE | | | | | | | | | | | | |
| 30 | United States | 4,239 | 10,330 | 2,949 | 3,421 | 4,239 | 10,330 | | | | | | |

D Withheld to avoid approximately disclosing figures for individual companies.

1See Table 1, footnote 2.

2Represents coal mechanically cleaned in the bituminous coal industry.

3Includes the quantity and value of coal used at producing establishments for power and heat.

4Represents the sum of "Raw coal mined for shipment or use by employees" and "Coal mechanically cleaned for shipment."

| Machan | ically cleaned | d coal | Raw and cleaned coal used at producing | | | chased and without | Method o | of marketing o | or disposition | 1 (1954) | |
|--------------------------------------|-----------------------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------|--------------------------------------|------------------------------|--------------------------------------|----------------------------------|--------------------------------------|-------------------------|----------------------------|
| riccian | for shipment ² | COUL | and | nts for power heat nort tons) | mechanical | | Sold in the | open market | Not sold i | n the open | Line |
| Quantity (1,000 short tons) | 954 Value (\$1,000) | 1939 quantity (1,000 short tons) | 1954 | 1939 | Quantity (1,000 short tons) | Resale value (\$1,000) | Quantity (1,000 short tons) | Value (\$1,000) | Quantity (1,000 short tons) | Value (\$1,000) | no. |
| (D) | (D) | (NA) | 763 | (NA) | 12,637 | 53,790 | 317,599 | 1,345,736 | 76,810 | 441,448 | 1 |
| (D) | (D) | (NA) | - 757 | (NA) | 12,637 | 53,790 | (D) | (D) | (D) | (D) | 2 |
| 228,172 | 1,083,564 | 779,377 | 754 | 62,548 | 12,637 | 53,790 | (D) | (D) | (D) | (D) | 3 |
| 38,363 | 227,153 | 20,929 | 204 | 489 | 2,393 | 10,001 | 41,340 | 192,730 | 30,634 | 187,538 | 4 |
| 13,833 13,418 34,918 | 55,263 55,667 135,300 | 3,378 3,589 14,109 (⁷) | 2 35 106 | 98 153 724 27 | 492 | 1,869 108 | 42,380 40,121 | 157,013 153,884 | 6,211 1,884 | 27,559 6,503 | 5 6 7 8 |
| 2,589 940 | 9,842 3,945 | 1,055 1,138 | 1 2 | 12 31 14 | | | 1,190 2,789 1,101 | 4,472 10,828 4,705 | 9 2 5 | 36 17 21 | 9 10 11 |
| 7,319 74,405 | 35,988 362,251 | (7) 1,272 18,767 | 24 175 | 8 25 363 (⁶) | (D) 3,242 4,199 | (D) 14,687 16,939 | 423 15,985 100,248 9 | 1,898 71,374 451,308 43 | 8 152 17,991 | 25 841 103,546 | 12 13 14 15 |
| 29,933 481 8,439 | 120,955 2,107 50,197 | 2,117 320 9,939 | 31 1 22 | 164 35 73 | 2,012 225 (D) | 9,051 839 (D) | 49,915 6,216 3,299 | 196,518 24,655 17,913 | 4,548 116 7,460 | 26,107 656 47,547 | 16 17 18 |
| 685 | 5,150 | (⁷) | 1 | 8 13 | (D) | (D) | 479 (ወ) ••• | 3,601 (D) | (D) | 8 (D) | 19 20 21 |
| } 24 } 170 | 1 <i>5</i> 2 818 | $ \left\{ \begin{pmatrix} 7 \\ \vdots \\ 793 \\ (7) \end{pmatrix} \right. $ | 4 77 44 1 | 4 99 147 37 (⁶) | (⁹) | 2 | 1,810 2,027 121 11 | 6,800 9,745 721 68 | 2,516 939 2 | 8, 333 6,376 16 | 22 23 24 25 26 |
| 2,064 | 14,469 | (7) | 16 | 7 | | | 3,360 | 17,588 | 2,280 | 17,165 | 27 |
| 591 | 4,307 | 1,367 | 8 | ⁶ 16 | | | , | | | | 28 |
| (D) | (D) | (NA) | 3 | (NA) | | | 662 | 6,445 | 4 | 32 | 29 |
| | | | 6 | 29 | | ••• | (D) | (D) | (D) | (D) | 30 |

Figures for Michigan, Maryland, Arkansas, Texas, Montana, New Mexico, and Utah are included in the United States total but are not available separately.

Figures for Oklahoma are included with figures for Utah, Washington, and Oregon.

Figures for Oklahoma are included with figures for Utah, Washington, and Oregon.

DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS WASHINGTON 25, D. C.

OFFICIAL BUSINESS

Postage and Fees Paid
U. S. Department of Commerce

GRO

1954 Census of Mineral Industries

December 1955 Series: MI-12-2

BITUMINOUS COAL AND LIGNITE DISTRIBUTION STATISTICS

During 1954, about 80 percent of the total tonnage of bituminous coal and lignite produced in the United States and Alaska was sold in the open market. Approximately three-quarters of the total production was shipped by rail, river, truck, or conveyor from the mine. For such shipments sold in the open market, about 36 percent was shipped to electric utilities, 8 percent to coke and gas plants, 20 percent to retail dealers, and about 35 percent to other open market outlets. Water transshipments, via Great Lakes and tidewater ports, amounted to about 15 percent. These percentages, by method of shipment, are unadjusted for approximately 8 percent of the total production which was sold through distributors and wholesalers, and for which separate distribution statistics are not yet available. Only 4 percent of all coal in 1954 was taken for railroad fuel.

The percentage of coal not sold in the open market varies from a fraction of one percent in Iowa to about 65 percent in the Western Pennsylvania and Southeastern districts. The largest production for a district in 1954, about 24 percent of all coal produced, was in District 8, consisting of western Virginia, southern West Virginia, eastern Kentucky, and northern Tennessee. The second largest production for a district was in Western Pennsylvania, accounting for 11 percent.

These figures are based on a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. It represents a sample of bituminous coal and lignite companies producing about 95 percent of all coal from the United States and Alaska in 1954. The coverage varies from a low of 81 percent in the Iowa district to a high of 99 percent in six districts. It amounts to over 90 percent in all but four of the districts or groups of districts for which statistics are shown. The companies included in the sample represent producers of 10 thousand tons or more of bituminous coal or lignite in 1953 or 1954. Approximately one-third of all companies engaged in mining or cleaning bituminous coal or lignite in 1954 are covered.

Separate reports were obtained for the distribution of coal from each "producing district" in which a company operated mines or cleaning plants. These "producing districts" are the districts generally recognized by the bituminous coal and lignite mining industry and defined on pages 14 and 15 of the present report. The data contained in this preliminary release include figures from all satisfactory reports which were received from respondents by December 1. The statistics are based primarily on distribution data reported by the producer of the coal, but include some tonnages of coal which companies covered in the sample purchased for resale, with or without cleaning, from smaller companies not included in the sample.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

Under "Coal not sold in the open market" shippers were instructed to report tonnages of coal delivered to and consumed by affiliated concerns where (1) the relationship between the producer and buyer is that of a wholly owned or controlled parent and subsidiary company; (2) there is a common ownership or control of both the producer and buyer by a third party; and (3) the relation between the producer and buyer for any similar reason is such that the sale is noncompetitive. Under "Coal sold in the open market" {respondents were asked to report coal disposed of through such marketing channels as affiliated selling agencies, storage docks, or retail yards, where the ultimate consumers are not affiliates of the producer.

Because of the detailed breakdown of the distribution data, many figures cannot be shown separately without approximately disclosing the data of individual companies. In such cases combinations have been made within each producing district of various States, methods of marketing, consumer uses, and other items. These combinations are indicated by brackets or explained in detail in the footnotes to the tables.

For each district, or group of districts, for which statistics are shown, the total production represents the sum of detail presented for the district. However, the sum of the figures for each district shown for a particular method of shipment, State of destination, or class of consumer does not always equal the total for all districts because of the combinations described above.

Figures have been rounded to the nearest thousand tons and are not shown for method of shipment, State of destination, or consumer use items amounting to less than 500 tons for any single category. There is no indication in the tables where such shipments occur.

Final and more detailed figures on coal distribution will appear in the Census bulletin, "Distribution of Bituminous Coal and Lignite," which will be published and offered for sale by the Superintendent of Documents in the near future. Prior to preparation of this final report, efforts are being made to secure from coal distributing and wholesaling companies detailed distribution figures for the tonnages shown for the various districts under "Shipments through distributors and wholesalers (destination and use not reported)." In most cases producers cannot report reliable figures for such tonnages and the data can be obtained only from such distributors and wholesalers.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. The last minerals census covered the year 1939; however, coal distribution data were not collected for that year. Prior minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years.

Employees of the Bureau of Mines (U. S. Department of the Interior), acting as sworn Census agents, collected and compiled a major portion of the statistics included in this release.

Table 1.--BITUMINOUS COAL AND LIGNITE SOLD IN THE OPEN MARKET, NOT SOLD IN THE OPEN MARKET, AND ESTIMATED SAMPLE COVERAGE, BY DISTRICT OF ORIGIN: 1954

| | District of origin ¹ | Produ | ction included in (1,000 short tons | | Percent of |
|-----------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------|----------------------------------------------------|
| No. | Name | Total | Coal sold in open market | Coal not sold in open market | estimated total 1954 production ² |
| | United States and Alaska, Total | 373,286 | 296,994 | 76,292 | 95 |
| 1 2 3 and 6 4 5 | Eastern Pennsylvania Western Pennsylvania Northern West Virginia and Panhandle Ohio Michigan. | 27,212 42,626 34,712 30,199 | 24,076 15,224 30,332 26,564 | 3,136 27,402 4,380 3,635 | 92 99 96 99 |
| 7 8 9 10 11 | Southern No. 1 | 38,548 88,503 22,108 41,395 12,588 | 30,131 77,159 ³ 22,078 39,534 ³ 12,541 | 8,417 11,344 430 1,861 447 | 99 89 98 99 97 |
| 12 13 14, 15, | IowaSoutheasternArkansas-Oklahoma, Southwestern, and | 1,067 11,269 | 1,064 3,759 | 3 7 , 510 | 81 88 |
| and 18 16 and 17 20 | New Mexico Northern and Southern Colorado Utah | 7,183 2,810 4,934 | 5,438 ³ 2,753 2,772 | 1,745 457 2,162 | 99 92 89 |
| 21 19, 22, | North Dakota-South Dakota | 2,794 | ³ 2,775 | ⁴ 19 | 99 |
| and 23 | Alaska) | 5,338 | 2,696 | 2,642 | 96 |

¹For the definition of Bituminous Coal and Lignite Producing Districts see pages 14 and 15.

²The estimated total used is based primarily on the Bureau of Mines figures in Weekly Coal Report No. 1955 (March 4, 1955).

³Includes coal not sold in the open market except coal used at mines and sales to employees.

⁴Includes only coal used at mines and sales to employees.

| | | | | I | istrict of c | origin ¹ | | |
|----------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------|------------------------------|-------------------------------------------------------------|---------------------|------------------------|------------------------|
| Line no. | Method of shipment, Division, State of destination, and class of consumer | Total | l Eastern Pennsylvania | 2 Western Pennsylvania | 3 and 6 Northern West Virginia and Panhandle | 4 Ohio | 7 Southern No. 1 | 8 Southern No. 2 |
| 1 | Production included in sample (United States and Alaska), total | 373,286 | 27,212 | 42,626 | 34,712 | 30,199 | 38,548 | 88,503 |
| 2 | Coal sold in open market | 296,994 76,292 | 24,076 3,136 | 15,224 27,402 | 30,332 4,380 | 26,564 3,635 | 30,131 8,417 | 77,159 11,344 |
| 4 | Shipments by rail, river, combination rail and river, truck (destination known), and conveyor (other than railroad fuel), total | 270,295 | 19,511 | 37,886 | 23,493 | 23,585 | 21,253 | 48,151 |
| 5 | Coal sold in open market, total | 203,333 | 16,715 | 12,002 | 19,151 | 20,039 | 14,238 | 39,762 |
| 6 | Electric utilities | 73,793 | 6,510 | 2,041 | 8,126 | 8,912 | 2,638 | 9,200 |
| 7 | Coke and gas plants | 16,490 | 1,256 | 4,416 | 1,873 | 122 | 3,254 | 3,995 |
| 8 9 | Retail dealersAll others | 41,108 71,942 | 1,427 7,522 | 1,534 4,011 | 1,310 7,842 | 2,670 8,335 | 5,785 2,561 | 12,004 14,563 |
| 10 | Coal not sold in open market | 66,962 | 2,796 | 25,884 | 4,342 | 3,546 | 7,015 | 8,389 |
| 11 | New England Massachusetts (coal sold in open market), total | 1,238 | 745 | 9 | 361 | | 92 | 31 |
| 12 | Electric utilities | 445 | 363 | (⁶) | 45 | | (⁶) | (6) |
| 13 14 | Retail dealers Coke and gas plants and all others | 170 623 | 85 297 | *** | 58 258 | | 26 666 | 630 |
| 15 | Connecticut (coal sold in open market), total | 959 | 674 | 5 | 277 | | | 3 |
| 16 | Electric utilities | 526 97 | 370 | (⁶) | (⁶) 19 | ••• | ••• | , |
| 17 18 | Retail dealers | 336 | 76 228 | 65 | 6 ₂₅₈ | | | 3 |
| 19 | Maine, New Hampshire, Vermont, and Rhode Island (coal sold in open market), total | 361 | 189 | 3 | 129 | | 5 | 35 |
| 20 21 22 | Electric utilities | (⁶) 85 ⁶ 276 | (6) 32 6157 | } | (6) 27 6102 | | } 5 | 35 |
| 23 | Middle Atlantic New York, total | 14,282 | 5,832 | 2,016 | 5,721 | 220 | 193 | 300 |
| 24 | Coal sold in open market | 12,787 | 45,832 | ⁴ 2,016 | ⁴ 5,721 | 220 | 4193 | 300 |
| 25 | Electric utilities | 4,609 | 1,722 | 318 | 2,469 | (⁶) | (⁶) | (6) |
| 26 27 | Coke and gas plants | 1,174 830 | 291 367 | 311 83 | 288 257 | 27 | 64 | 220 25 |
| 28 | All others | 6,174 | 3,452 | 1,304 | 2,707 | ∫ ⁶ 193 | 658 | ∫ ⁶ 55 |
| 29 | Coal not sold in open market | 1,495 | ,452 | 1,504 | 2,707 | l | 5 | l |
| 30 | New Jersey (coal sold in open market), total. | 4,120 | 1,857 | 167 | 2,025 | ••• | 54 | 17 |
| 31 32 | Electric utilities | 2,537 | 1,122 | (⁶) | 1,278 (⁵) | ••• | (⁶) | ٠٠٠ ٢ |
| 33 34 | Retail dealers. | 221 1,293 | 160 575 | 6167 | { 5,44 5,703 | | 654 | { } 17 |
| 35 | Pennsylvania, total | 41,454 | 7,319 | 26,752 | 5,650 | 211 | 1,233 | 289 |
| 36 | Coal sold in open market | 19,247 | 47,319 | 7,717 | ⁴ 5,650 | 211 | 608 | 289 |
| 37 | Electric utilities | 5,051 | 2,047 | 1,135 | 1,767 | (6) | (⁶) | **: |
| 38 39 | Coke and gas plants | 4,217 2,288 | 618 580 | 2,358 1,260 | 761 113 | 91 | 318 1 <i>5</i> 7 | 162 87 |
| 40 | All others | 7,691 | 4,074 | 2,964 | 3,009 | ∫ ⁶ 120 | 6133 | 40 |
| 41 | Coal not sold in open market East North Central | 22,207 | , | [19,035 | J | ι | 625 | ••• |
| 42 | Ohio, total | ⁷ 40,782 | 188 | ⁷ 5,198 | 2,140 | 19,737 | 3,469 | 10,037 |
| 43 | Coal sold in open market | ⁷ 30,262 | 188 | ⁷ 1,270 | 2,140 | 16,191 | 1,847 | 8,613 |
| 44 45 | Electric utilities | 9,794 73,400 | 1 | (⁶) | 1,034 (⁵) | 7,087 122 | (6) 830 | 1,328 1,705 |
| 46 47 | Retail dealers | 6,443 10,625 | 188 | { 119 81,151 | 328 5778 | 2,314 6,668 | 873 6144 | 2,800 2,780 |
| 48 | Coal not sold in open market | 10,625 | ٠ | 3,928 | | 3,546 | 1,622 | 1,424 |
| | footnotes, see end of table. | | | 2,20 | | | | Page 4 of 15 |

short tons)

| | | | | | District o | of origin ¹ | | | | | |
|----|----------------------------------------------------------|------------------------------------------------------------|----------------------------------------|-------------------|-------------------------------------|-----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|-------------------------------------------|----------------------------------------------------------------|---------|
| Ke | 9 West entucky | 10 Illinois | 11 Indiana | 12 Iowa | 13 Southeastern | 14, 15, and 18 Arkansas- Oklahoma, Southwestern, and New Mexico | 16 and 17 Northern and Southern Colorado | 20 Utah | 21 North Dakota- South Dakota | 19, 22, and 23 Wyoming, Montana, and Washington | Li |
| | 22,108 | 41,395 | 12,588 | 1,067 | 11,269 | 7,183 | 2,810 | 4,934 | 2,794 | 5,338 | 1 |
| | ² 22,078 | 39,534 1,861 | ² 12,541 ³ 47 | 1,064 3 | 3,759 7,510 | 5,438 1,745 | ² 2,753 ³ 57 | 2,772 2,162 | ² 2,775 ³ 19 | 2,696 2,642 | 3 |
| | 16,999 | 36,672 | 11,002 | 1,022 | 10,680 | 7,016 | 2,667 | 4,744 | 2,756 | 2,858 | 4 |
| | 416,999 | 436,672 | 411,002 | 1,022 | 3,236 | 5,289 | 42,667 | 2,618 | 42,756 | 2,515 | 2 |
| | 7,592 (⁵) 3,772 ⁵ 5,635 | 17,682 (⁵) 6,644 ⁵ 12,346 | 4,481 15 1,354 5,152 | 446 237 339 | 1,418 538 363 917 7,444 | 2,369 583 772 1,565 | 342 191 760 1,374 | 151 (⁵) 1,471 \$ 5996 2,126 | 1,405 578 773 | 480 (⁵) 427 51,608 343 | 6 7 8 9 |
| | | | | | | | | | | | 1 |
| | ••• | ••• | ••• | ••• | ••• | | ••• | ••• | | ••• |] |
| | ••• | ••• | ••• | ••• | ••• | | ••• | ••• | ••• | |] |
| | | ••• | ••• | ••• | ••• | | | ••• | ••• | ••• | : |
| | | ••• | ••• | | ••• | | | ••• | ••• | ••• |] |
| | | ::: | ::: | | ::: | ••• | ::: | ••• | ••• | ••• | |
| | | | | | | | ••• | | | ••• | : |
| | ::: | | | | ••• | | | ••• | | | 1 |
| | ••• | ••• | ••• | | ••• | ••• | ••• | ••• | | ••• | 1 |
| | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• | 1 |
| | ••• | ••• | ••• | ••• | | ••• | ••• | ••• | ••• | ••• | 1 |
| | ••• | | | ••• | ••• | | •… | ••• | ••• | ••• | : |
| | ••• | ••• | ••• | | ::: | | ••• | ••• | ••• | ••• | |
| | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• | *** | |
| | | | | ••• | | | | | ••• | | |
| , | | | | ••• | ••• | ••• | ••• | ••• | | ••• | |
| Į | ••• | ••• | ••• | ••• | | | ••• | ••• | ••• | ••• | |
| ŧ | ••• | ••• | ••• | ••• | | ••• | ••• | ••• | ••• | ••• | - |
| | ••• | ••• | | | ••• | | | ••• | | | |
| | ••• | ••• | | ••• | | | | ••• | | ••• | - |
| | | ••• | ••• | ••• | | | | ••• | | | |
| | | ••• | | | | ::: | | ••• | | | |
| | | | | | | | | | | | 4 |
| | 13 | | | | | | | | | | ١, |
| | 13 | ••• | ••• | ••• | ••• | | ••• | ••• | ••• | ••• | 4 |
| | ::: | | ••• | ••• | | ::: | ••• | ••• | ••• | ••• | 2 |
| | 13 | { ::: | ••• | ••• | ::: | ::: | ••• | ••• | ••• | ••• | 1 |
| | i | | ••• | ••• | | | | | | Page 1 | ، ا |

| | | | District of origin ¹ | | | | | |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------|------------------------------|-------------------------------------------------------------|-----------------------|-------------------------------------------|------------------------|
| Line no. | Method of shipments, Division, State of destination, and class of consumer | Total | l Eastern Pennsylvania | 2 Western Pennsylvania | 3 and 6 Northern West Virginia and Panhandle | 4 Ohio | 7 Southern No. 1 | 8 Southern No. 2 |
| | Shipments by rail, river, combination rail and river, truck (destination known), and conveyor (other than railroad fuel)Continued | | | | | | | |
| 1 | East North CentralContinued Indiana, total | ⁹ 23,693 | 1 | | 80 | ⁹ 105 | 5,028 | 7,739 |
| 2 | Coal sold in open market | 914,724 | 1 | | 80 | ⁹ 105 | 45,028 | 47,73 |
| 3 4 5 6 | Electric utilities. Coke and gas plants. Retail dealers All others. | 6,099 1,105 2,884 94,636 | | | } ::: } 80 | (6) { 11105 | (6) 104,674 349 65 | 105,37 1,48 23 |
| 7 | Coal not sold in open market | 8,969 | | | | | (¹⁰) | (10 |
| 8 | Illinois, total | ⁹ 36,534 | 5 | | 97 | (9) | 1,626 | 2,84 |
| 9 | Coal sold in open market | ⁹ 33,980 | 5 | | 97 | (9) | ⁴ 1,626 | ⁴ 2,84 |
| 10 11 12 13 | Electric utilities | 914,362 963 98,805 99,850 | 1 4 | | (5) 62 535 | (9) (9) (9) | 269 994 | (6 52 1,15 |
| 14 | Coal not sold in open market | 2,554 | | | | | 363 | ⁶ 1,16 |
| 15 | Michigan, total | 79,473 | 1249 | (7) | ¹³ 193 | ¹² 2,383 | 1,657 | 4,72 |
| 16 | Coal sold in open market | ⁷ 9,416 | 1249 | (7) | ¹³ 193 | ¹² 2,383 | 41,657 | 44,77 |
| 17 18 19 20 | Electric utilities. Coke and gas plants. Retail dealers. All others. | 1,638 7165 3,770 3,843 | (6) | (†) | (⁵) 63 15130 | 957 147 121,279 | 77 1,519 | 59 1,89 |
| 21 | Coal not sold in open market | 57 | | | | | 61 | 2,1 |
| 22 | Wisconsin (coal sold in open market), total | 3,829 | (12) | | 19 | (¹²) | 341 | 4: |
| 23 24 25 26 | Electric utilities. Coke and gas plants. Retail dealers. All others | 1,001 36 932 1,860 | (12) | | 19 | (12) | (⁵) 335 ⁵ 6 | (° (° 163) |
| | West North Central | | | | | | | |
| 27 | Minnesota, total | 2,373 | 1 | ••• | (13) ((13) | ••• | 195 | 10 |
| 28 | Coal sold in open market | 42,373 | 1 | i | ` ′ | ••• | 4195 | 1 |
| 30 31 | Electric utilities | 1,401 276 | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | ••• | (ⁱ³) | • • • |] | |
| 32 | Coal not sold in open market | 696 | | | ` | | 7 195 | 1. |
| 33 | Iowa (coal sold in open market), total | , 4,775 | 1 | | 1 | | 14 | 36 |
| 34 | Electric utilities | 1,336 | | | | | | · (! |
| 35 36 37 | Coke and gas plants | 21 1,796 | 1 | | ··· | | } | { 32 52 |
| 38 | All others | 1,622 6,313 | 2 | | | | 161 | 1′ |
| 39 | Coal sold in open market | 5,531 | 2 | | | | 161 | 17 |
| 40 41 | Electric utilities | 2,051 245 | ••• | | | ::: | 135 | |
| 42 43 | Retail dealersAll others | 1,520 1,715 | 2 | ::: | ••• | | 26 | 1' |
| 44 | Coal not sold in open market | 782 | | ••• | ••• | | | • |
| 45 46 | North Dakota and South Dakota, total Coal sold in open market | ²² 2,714 ²² 2,398 | | | | | 1 | <u>:</u> |
| 47 | Electric utilities | 1,304 | | | ••• | | | |
| 48 49 | Retail dealersAll others | ²² 668 ²² 426 | | ::: | | ::: | | - |
| 50 | Coal not sold in open market | 316 | | ! | ••• ! | | | age 6 of |

| | tons) | | | | District o | of origin ¹ | | | | | |
|----|-------------------------|---------------------------|----------------------------------------|------------|-----------------------------------------|-----------------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------------------------------|-------------|
| W | 9 est tucky | 10 Illinois | Il Indiana | 12 Iowa | 13 Southeastern | 14, 15, and 18 Arkansas- Oklahoma, Southwestern, and New Mexico | 16 and 17 Northern and Southern Colorado | 20 Utah | 21 North Dakota- South Dakota | 19, 22, and 23 Wyoming, Montana, and Washington | Line no. |
| | | | | | | | | | | | |
| | 1,140 | 1,345 | 8,255 | | • • • • • • • • • • • • • • • • • • • • | | | ••• | ••• | ••• | 1 |
| | 1,140 | 1,345 | 48,255 | ••• | | | | | ••• | *** | 2 |
| | 626 | 699 (⁵) | 4,115 14 | | ••• | | ••• | ••• | ••• | ••• | 3 4 |
| | 110 404 | 29 5617 | 818 | | ••• | | ••• | ••• | ••• | ••• | 5 |
| | | | 3,308 | | | ••• | ••• | ••• | ••• | ••• | 7 |
| | 3,694 | 26,505 | 1,763 | ι | ••• | • • • • • • • • • • • • • • • • • • • • | | | | ••• | 8 |
| | 3,694 | 426,505 | 1,763 | ••• | | ••• | | | ••• | ••• | 9 |
| | 970 | 13,223 | 155 | ••• | ••• | ••• | | | ••• | *** | 1.0 |
| | 1,659 | (⁵) 4,492 | 441 | ::: | | | ••• | ••• | ••• | *** | 12 |
| Į. | 1,065 | 58,790 | { 1,167 | ::: | | ::: | | ••• | ••• | ••• | 13 |
| Į | |) 0,750 | l | ••• | ••• | | ••• | | ••• | ••• | 14 |
| | 335 | 71 | 74 | | ••• | ••• | | ••• | ••• | ••• | 15 |
| | 335 | 71 | 74 | ••• | ••• | | ••• | ••• | ••• | ••• | 16 |
| | (⁶) | ••• | ••• | ••• | | | | ••• | ••• | ••• | 17 18 |
| (| 113 6 ₂₂₂ | } | 74 | { ::: | ::: | ::: | ••• | ••• | ••• | ••• | 19 |
| 1 | | , | | ι | ••• | ••• | ••• | ••• | ••• | ••• | 21 |
| | 869 | 1,392 | 744 | ••• | ••• | ••• | ••• | ••• | ••• | ••• | 22 |
| | 182 | 609 | (⁶) | ••• | ••• | ••• | ••• | ••• | ••• | ••• | 23 |
| | 168 | 213 | 51 | | | ••• | : | | ••• | ••• | 24 25 |
| | 519 | 570 | 6693 | ::: | | ••• | ••• | ••• | ••• | ••• | 26 |
| | 510 | 1,067 | (17) | | | (18) | | ••• | 359 | ••• | 27 |
| | 510 | 1,067 | (17) | | | (18) | ••• | ••• | 359 | | 28 |
| | 226 | 875 | (19) | | | (18) (18) | | ••• |] | ··· | 29 |
| | 126 158 | 67 125 | (¹⁷) (¹⁷) | ••• | ::: | (10) | ••• | ••• | 359 | 1 ::: | 30 31 |
| | | ••• | ••• | | | | ••• | • • • | ••• | ••• | 32 |
| | 551 | 2,426 | ¹⁷ 166 | 1,022 | ••• | ¹⁸ 356 | 5 | 2 | ••• | (19) | 33 |
| | 59 | 713 | (6) (5) 1729 | 446 | | 18221 | ••• | ••• | ••• | ••• | 34 |
| | 310 | 777 | ¹⁷ 29 ²⁰ 137 | 237 | | 18121 | 5 | { "2 | ••• | (¹⁹) | 35 36 |
| | 182 876 | 936 2,495. | (17) | 339 | 1 | 2,595 | (²¹) | | ••• | ••• | 37 38 |
| | 4876 | 2,495 | (17) | | 1 | 42,595 | (21) | ••• | | ••• | 39 |
| ſ | | 503 | | | ::: | 1,548 (⁵) | ••• | ••• | ••• | ••• | 40 |
| 1 | 38 | 979 ∫ 1,013 | (17) (17) | | 1 | 1 401 | ſ (² 1) | ••• | ••• | ••• | 42 43 |
| } | 838 | [[] | | | | 5646 | l | ••• | ••• | | 44 |
| | 29 | 26 | ••• | ••• | ••• | 24 | ²¹ 17 | (²²) (²²) | 2,397 ⁴ 2,397 | ¹⁹ 190 ²³ 190 | 45 |
| | 29 (⁶) | (6) (6) | ••• | | | (6) | | | 1,213 | (6) | 46 |
| { | 622 | 6 620 | | ::: | | (6) 7 617 | 2117 | $\left\{\begin{array}{c} \binom{22}{22} \\ \binom{22}{22} \end{array}\right.$ | 563 621 | 1949 6141 | 48 49 |
| | ••• | | | | 1 | | · | l • |] | Page 7 | 50 |

| Shipments by rail, river, combination rail and river, truck (destination known), and conveyor (other than railroad fuel)—Continued West North Central-Continued Nebraska and Kannsa (coal nold in open market), total. South Atlantic South A | | | | 1 | | | | | (1,000 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------------|----------------------|------------------|---------------------|-------------------------------------|--------------------|-------------------------|------------------------|
| Note | | | | | | istrict of o | rigin ¹ | | |
| river, trunk (destination known), and conveyor (other than ratirorad fuel)—Continued West North Central—Continued Nebrenica and Kansas (coal sold in open market), total. | | | Total | Eastern | Western | Northern West Virginia and | | 7 Southern No. 1 | 8 Southern No. 2 |
| Notreaks and Kaness (coal cold in open | | river, truck (destination known), and conveyor | | | | | | | |
| Retail dealers | 1 | Nebraska and Kansas (coal sold in open | ²² 1,457 | 1 | | | | | |
| Delaware and Maryland, total. | 3 | Retail dealers | ²² 406 | | ••• | | ••• | ::: | ::: |
| Electric utilities | 5 | | ²⁴ 5,766 | 1,924 | 159 | 3,232 | | 451 | (24) |
| Solution Columbia Columbia | 6 | Coal sold in open market | ²⁴ 2,661 | 41,924 | | 43,232 | ••• | 451 | (24) |
| 9 Retail dealers. 24,235 | | Electric utilities | 1,383 | 787 | | | | (⁶) 255 | (24) |
| 10 All others. | | | 24235 | | | | | 102 | (24) |
| 11 Coal not sold in open market. | | | ²⁴ 780 | 51.0/8 | ∫ ⁶ 159 | 50 000 | l f | 694 | (24) |
| market , total | 11 | Coal not sold in open market | 3,105 | 1,047 | l 1 | 32,768 | J | | |
| Retail dealers | 12 | market), total | ²⁵ 894 | 81 | (25) | | | 773 | 7 |
| 15 | | | | | ••• | | | 519 205 | (6) |
| 17 | | | 2561 | | (²⁵) | | | 49 | 67 |
| 18 | 16 | Virginia, total | 247,171 | 2671 | (27) | | (27) | 3,289 | ²⁴ 3,790 |
| Coke and gas plants 223 241,145 2971 (27) 3027 51 243,377 | 17 | Coal sold in open market | ²⁸ 7,171 | ²⁶ 71 | (27) | ²⁶ 28 | (27) | 3,289 | ²⁸ 3,790 |
| Retail dealers | 18 | Electric utilities | 2,290 | (⁶) | | | (27) | 1,212 | 1,060 24348 |
| All others | | Coke and gas plants | 24359 241 145 | | l (| 1 | | (5) 684 | 2 4457 |
| 22 | | | | [¹⁷² | (27) | 3027 | | 51,393 | 11 |
| Coal sold in open market. 239,506 313,405 43,162 27895 27755 25 25 25 26 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 27895 | 22 | Coal not sold in open.market | 243,377 | 1 | | | | | 241,925 |
| Coal sold in open market | 23 | West Virginia, total | ²⁵ 12,996 | 207 | ³¹ 3,405 | 3,162 | 27895 | 897 | 4,435 |
| Coke and gas plants. 2,787 373 207 { (5) 697 123 123 124 140 { (26) 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 140 | 24 | | ²⁵ 9,506 | 207 | ³¹ 3,405 | ⁴ 3,162 | ²⁷ 895 | 4897 | 44,435 |
| Retail dealers | 25 | Electric utilities | 3,429 | , | | | ²⁷ 755 | (6) | 1,711 |
| 28 | | Coke and gas plants | | 207 | 1 3 | | i 1 | ∫ ₂₉₂ | 433 88 |
| Coal not sold in open market 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 3,490 | | | ²⁵ 2,917 |] | 11 | | r | [[] | |
| total | 29 | Coal not sold in open market | | | 323,405 | 1,419 | [] | 6471 | 2,203 |
| Signature Sign | 30 | | 5,124 | (26) | | (²⁶) | ••• | 952 | 4,160 |
| Coke and gas plants 23 | 31 | Electric utilities. | | | | | | 557 | 1,944 |
| 34 All others. | 32 | Coke and gas plants | 23 | | | ••• | | (⁵) 156 | (5) 884 |
| total. 2,014 36 | 34 | All others | | (26) | | (²⁶) | | 5239 | 51,332 |
| 37 Coke and gas plants. 448 | | total | | | | | | ³³ 100 | 1,914 |
| Retail dealers | | | 1 | | | | | (⁶) | 1.07/ |
| 40 Georgia and Florida (coal sold in open market), total. 2,181 41 Electric utilities. 1,081 42 Coke and gas plants. (5) 43 Retail dealers. 547 44 All others. 5553 East South Central Kentucky, total. 7,977 46 Coal sold in open market. 7,236 47 Electric utilities. 4,076 48 Coke and gas plants. 141 | 38 | Retail dealers | IJ | l | ••• | ••• | ••• | 333 697 | 1,914 |
| market), total | | | 1,035 | | | ••• | ••• | | , |
| Coke and gas plants | | market), total | | | | | | (33) | 1,448 |
| 43 Retail dealers. 547 44 All others. 5553 East South Central 45 Kentucky, total 7,977 46 Coal sold in open market. 7,236 47 Electric utilities. 4,076 48 Coke and gas plants 141 | | | 1,081 | | | | | | (⁵) |
| 45 Kentucky, total | 43 | Retail dealers | 547 | ••• | ••• | | | (33) | 529 5527 |
| 46 Coal sold in open market. 7,236 | 45 | | 7.977 | | | | | 303 | 1,763 |
| 47 Electric utilities | | | | | | | | 4303 | 41,763 |
| 48 Coke and gas plants 141 | | | | | | | | | 269 |
| 49 Retail dealers | 48 | Coke and gas plants | 141 | | ••• | ••• | ••• | , | (⁵) |
| 50 All others | | | | | | | • • • | 303 | { } 5994 |
| 51 Coal not sold in open market | | | | | | | | J I | ו גן |
| For footnotes, see end of table. | | | | | | | | 1 | Page 8 of 15 |

| | | | | | Origin | District of | | | | |
|----|----------------------------------------------------------------|-------------------------------------------|------------|------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------|------------|---------------|----------------|---------------------------|
| L: | 19, 22, and 23 Wyoming, Montana, and Washington | 21 North Dakota- South Dakota | 20 Utah | 16 and 17 Northern and Southern Colorado | 14, 15, and 18 Arkansas- Oklahoma, Southwestern, and New Mexico | 13 Southeastern | 12 Iowa | ll Indiana | 10 Illinois | 9 West ntucky |
| | | | | | | | | | | |
| | 164 | | 2223 | 146 | 1,081 | | | | 35 | 7 |
| | ••• | | | | 577 | | | | | |
| | 26 138 | | 2218 | 146 | 181 323 | ••• | ••• | | 32 3 | 7 |
| | | | | | | | | | | |
| | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• |
| | ••• | ••• | | *** | ••• | ••• | ••• | ••• | ::: | ••• |
| | | ••• | ••• | ::: | | ••• | ••• | ••• | | |
| | | | | | | | | | | |
| | ••• | ••• | | | | | | | | |
| | | | | | | | ••• | | | |
| | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• |
| | ••• | ••• | | | | ••• | ••• | | ••• | ••• |
| | ••• | ••• | | | | | ••• | ••• | ••• | ••• |
| | ••• | | | | | | | ••• | | |
| | ::: | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• |
| | ::: | ::: | ::: | | ••• | ::. | ••• | ••• | • • • • | ••• |
| | | | | ••• | | | ••• | | | ••• |
| | ••• | ••• | ••• | ••• | | ••• | ••• | ••• | ••• | ••• |
| | ••• | ••• | ••• | ••• | | | ••• | ••• | ••• | ••• |
| | | | | | ::: | ••• | ••• | ••• | ••• | ::: |
| | ••• | ••• | | ••• | | | | ••• | ••• | • • • |
| | ••• | ••• | | ••• | ••• | ••• | ••• | ••• | ••• | ••• |
| | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• |
| | ••• | ••• | | ••• | | | ••• | | | ••• |
| | ••• | ••• | | | ::: | | ••• | ••• | | ••• |
| | ::: | ••• | ••• | ::: | ••• | | ••• | ••• | ••• | ••• |
| | | ••• | | | | (33) | | | | |
| | | | | | | ` <i>´</i> | | ••• | | |
| | ••• | ••• | ••• | | 1 | | ••• | | ••• | • • • |
| | ••• | ••• | ::: | ••• | | (33) | ••• | ••• | ••• | ••• |
| | ••• | | | | | ³³ 205 | ••• | | ••• | (³⁴) |
| | ••• | ••• | ••• | ••• | ::: | (6) | ••• | ••• | ••• | (³⁴) |
| | ::: | | ::: | | ::: | ³³ 19 ⁶ 186 | | | ::: | (34) |
| | | | | | | 1 | ••• | | 983 | 4,927 |
| | | | | | | 1 | ••• | | 983 | 4,927 |
| | | | | | | | ••• | ••• | 945 | 2,862 (⁵) |
| | ••• | ••• | ••• | | ••• | | ••• | ••• | • • • | (5) 516 |
| | ••• | ••• | ::: | | ::: | 1 | ••• | • • • • | 38 | ⁵ 1,549 |
| | | ••• | | | | | ••• | | | ••• |

| | | | | I | District of c | rigin ¹ | | |
|-------------|------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------|-----------------------------------------|-------------------------------------------------------------|-----------------------------------------|------------------------|-----------------------------------------|
| Line no. | Method of shipment, Division, State of destination, and class of consumer | Total | l Eastern Pennsylvania | 2 Western Pennsylvania | 3 and 6 Northern West Virginia and Panhandle | 4 Ohio | 7 Southern No. 1 | 8 Southern No. 2 |
| | Shipments by rail, river, combination rail and river, truck (destination known), and conveyor (other than railroad fuel)—Continued | | | | | | | |
| 1 | East South CentralContinued | 6,760 | | | | | 113 | 2,842 |
| 2 | Tennessee, total | 6,576 | | | | | 113 | 42,842 |
| 3 | Electric utilities | 3,119 | | | | | (6) | 709 |
| 4 | Coke and gas plants | 40 | | | | ••• | (5) | (⁵) |
| 5 | Retail dealersAll others | 1,514 1,903 | ••• | | ::: | | ¹⁶ 112 | 842 |
| 7 | Coal not sold in open market | 184 | ••• | | | | | ⁵ 1,291 |
| 8 | Alabama and Mississippi, total | 10,194 | | | | | 145 | 41 |
| 9 | Coal sold in open market | 2,841 | | | | | 145 | 41 |
| 10 | Electric utilities | 1,066 | | | | | | |
| 11 | Coke and gas plants | 569 | | ••• | | ••• | ³⁹ 145 | , |
| 12 | Retail dealers | 402 804 | | ::: | ::: | • • • | (39) | } 41 |
| 14 | Coal not sold in open market | 7,353 | | | | ••• | ` | ••• |
| 15 | West South Central Arkansas, Louisiana, Oklahoma, and | 0.654 | | | | | | |
| | Texas, total | 2,674 | ••• | | •••• | ••• | ••• | 1 |
| 16 | Coal sold in open market | 42,674 | ••• | ••• | ••• | ••• | ••• | 1 |
| 17 18 | Coke and gas plants Retail dealers | 297 114 | • • • | ••• | | • • • • • • • • • • • • • • • • • • • • | ••• | ··· |
| 19 | Electric utilities and all others | 1 | ſ | | | | ••• | ••• |
| 20 | Coal not sold in open market | 2,263 | [| | | ••• | | ••• |
| 22 | Mountain | 2 202 | | | | | | |
| 21 | Colorado, total | 2,383 | ••• | | ••• | ••• | ••• | ••• |
| 22 | Coal sold in open market | ⁴ 2,383 | ••• | ••• | ••• | ••• | ••• | ••• |
| 23 | Electric utilities | 144 | | | | • • • | ••• | • • • • • • • • • • • • • • • • • • • • |
| 25 | Retail dealers | 570 | , | ••• | ••• | ••• | | ••• |
| 26 | All others | 1,339 | ↓ | | | ••• | ••• | ••• |
| 27 | Coal not sold in open market | / / 50 | 1 | | | ••• | ••• | ••• |
| 28 | Utah, total | ⁴⁵ 2,337 | ••• | ••• | • • • • | ••• | ••• | ••• |
| 29 | Coal sold in open market | 462,337 | ••• | 1 | | ••• | ••• | ••• |
| 30 31 | Electric utilities | 1 <i>5</i> 1 330 | • • • • • • • • • • • • • • • • • • • • | * *** | ••• | | • • • • | ••• |
| 32 | Retail dealers | 45411 | , | | | | ••• | ••• |
| 33 | All others | 7 451,445 | 1 | | | ••• | ••• | ••• |
| 34 | Coal not sold in open market | } | 1 | | ••• | ••• | ••• | ••• |
| 35 | Montana, Idaho, Wyoming, New Mexico, Arizona, and Nevada, total | ⁴⁵ 1,863 | | | | | | |
| 3 6 | Coal sold in open market | 45 _{1,562} | | | | | | ••• |
| 37 | Electric utilities | 92 | | | | | ••• | |
| 38 | Retail dealers | ⁴⁵ 802 | | • • • • • • • • • • • • • • • • • • • • | | | ••• | ••• |
| 39 40 | All others Coal not sold in open market | ⁴⁵ 668 301 | | | | | ••• | ••• |
| | Pacific | | | | | | | |
| 41 | Washington, Oregon, and California, total | 3,099 43,099 | (⁵¹) | | ••• | ••• | (⁵¹) | ••• |
| 42 | Coal sold in open market | 92 | ` ′ | | ••• | ••• | ` ' | |
| 43 44 | Coke and gas plants Retail dealers | 608 | | | | | .::: | ••• |
| 45 | Electric utilities and all others | 2,399 | { (51) | ••• | ••• | • • • • • • • • • • • • • • • • • • • • | (51) | ••• |
| 46 | Coal not sold in open market | J. | 1 | | ••• | ••• | ••• | ••• |
| 47 | Alaska (coal sold in open market), total | ⁵² 507 | | ••• | | | ••• | ••• |
| 48 | Canada (coal sold in open market), total | ⁵² 1,469 | 340 | | 285 | 34 | 118 | 352 |
| 49 | Electric utilities | 52.15 | | (6) | 777 | 26 | 86 | (6) 156 |
| 50 | Retail dealers | 52 ₄₄₁ 1,023 | 314 | | 208 | 8 | 32 | 6196 |
| 51 | | | | | | | | |

percent of total 1954 production. See table 1.)

| hort | tor | 19) |
|------|-----|-----|
| | | - |

| shor | t tons) | | | | District o | f origin ¹ | | | | | |
|------|---------------------------------------------------------------------------|-------------------------------------------------------------|---------------|------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------|-------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Ke | 9 West entucky | 10 Illinois | 11 Indiana | 12 Iowa | 13 Southeastern | 14, 15, and 18 Arkansas- Oklahoma, Southwestern, and New Mexico | 16 and 17 Northern and Southern Colorado | 20 Utah | 21 North Dakota- South Dakota | 19, 22, and 23 Wyoming, Montana, and Washington | Line no. |
| 1 | 3,096 3,096 1,975 611 510 34713 34603 78 3432 | 35163 35163 35163 19 19 (38) 3819 | { ::: | | 572 4572 273 58 241 379,901 372,548 984 (5) 279 371,285 7,353 | (36) (36) (36) | | | | | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 |
| | 57 57 23 34 | (35) (35) (35) | { ::: | | (37) (37) (37) (37) (37) (37) | ³⁶ 2,490 ⁴⁰ 2,490 (5) 62 ³⁶ 2,428 | 4 4 4 | | ::: | ··· ··· ··· | 15 16 17 18 19 20 |
| | ••• | | | | | (41) (41) (41) | 422,414 432,414 (38) (5) 38897 441,517 | { | | 10 (6) 610 | 21 22 23 24 25 26 27 |
| | | | | | ::: | 41 ₂₈₄ 41 ₂₈₄ | (⁴²) (⁴²) ··· | 2,012 42,012 151 (5) 411 51,450 | ···· ···· { ···· | (45) (45) (45) (45) (45) | 28 29 30 31 32 33 34 |
| | ••• | | | | : ::: | 51 451 9 42 | 4781 4781 (6) 27 4954 | 853 4853 576 277 | { | 4 ⁵ 884 4 ⁸ 884 (6) 4 ⁵ 199 5 ⁰ 685 | 35 36 37 38 39 40 |
| | | | | | | 133 4133 (5) 5133 | (47) (47) (47) { | 1,848 41,848 (5) 464 51,384 | ···· ···· { ···· | 1,103 1,103 (5) 144 5959 | 41 42 43 44 45 46 47 |
| | 182 182 | | ::: | | | | ::: | 6 | ::: | (52) (52) | 48 49 50 51 52 |

| | | | | | | | | (1,000 |
|-------------|-------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------|------------------------------|-------------------------------------------------------------|---------------------|------------------------|------------------------|
| | | | | I | istrict of c | origin ¹ | | |
| Line no. | | Total | l Eastern Pennsylvania | 2 Western Pennsylvania | 3 and 6 Northern West Virginia and Panhandle | 4 Ohio | 7 Southern No. 1 | 8 Southern No. 2 |
| | Water transshipment (excludes railroad fuel; includes bunker fuel) | | | | | | | |
| 1 | Shipments via Great Lakes ports, total | ⁵³ 28,906 | 1,652 | 2,959 | 3,364 | 3,918 | 3,362 | 11,215 |
| 2 3 | Coal sold in open market Coal not sold in open market | ⁵³ 25,640 3,266 | 1,652 | 1,628 1,331 | 3,364 | 3,918 | 3,362 | 11,215 |
| 4 | Shipments via Tidewater ports, total | ⁵⁴ 23,239 | 2,815 | 86 | 2,840 | ••• | 8,689 | 8,805 |
| 5 6 | Coal sold in open market | ⁵⁴ 21,849 1,390 | 2,815 | 86 | 2,840 | ::: | 8,689 | 8,805 |
| 7 | Shipments by truck (destination unknown), total | ⁵⁴ 4,335 | 360 | 442 | 104 | 428 | 99 | 432 |
| 8 | Coal sold in open market | ⁵⁴ 4,328 7 | 360 | { 442 | } 104 | { 428 ··· | 99 | 432 |
| 10 | Railroad fuel (engine, powerhouse, and station use) United States companies, total | 11,708 | ⁵⁶ 555 | 482 | 844 | 1,273 | 192 | ⁵⁶ 1,850 |
| 11 12 | Coal sold in open market | 8,663 3,045 | } 56 ₅₅₅ | { 482 | 844 | 1,273 | { 192 | \$ 561,850 |
| 13 | Canadian companies, total | 533,059 | (56) | | 397 | 647 | ••• | (56) |
| 14 15 | Coal sold in open market | ⁵³ 3,052 7 | (⁵⁶) | ::: | 397 | 647 | { ::: | (⁵⁶) |
| 16 | Shipments through distributors and wholesalers (destination and use not reported; coal sold in open market) | 30,049 | 2,103 | 593 | 3,616 | 249 | 4,718 | 17,902 |
| 17 | Coal used at mines and sales to employees (not sold in open market) | 1,552 | 206 | 172 | 35 | 50 | 248 | 287 |
| 18 | Net change in inventory, total | 143 | 10 | 6 | 19 | 49 | -13 | -139 |
| 19 20 | Companies selling primarily in open market Companies not selling primarily in open market. | 80 63 | 12 -2 | -9 15 | 19 | 49 | 21 -34 | -139 |

¹ For the definition of bituminous coal and lignite producing districts, see pages 14 and 15.

²Includes coal not sold in the open market except coal used at mines and sales to employees. ³Includes only coal used at mines and sales to employees.

[&]quot;Includes "Coal not sold in open market."

[&]quot;Includes "Coal not sold in open market."

Shipments to "Coke and gas plants" are included with shipments to "All others."

Shipments to "Electric utilities" are included with shipments to "All others."

District 2 shipments to Michigan are included with shipments to Ohio.

Includes shipments to "Electric utilities" and to "Coke and gas plants" in Ohio and Michigan.

District 4 shipments to Illinois are included with shipments to Indiana.

¹⁰ COAl not sold in open market" is included with shipments to "Coke and gas plants."

11 Represents shipments to "Electric utilities" and "All others" in Indiana and Illinois, and shipments to "Retail dealers" in Illinois.

12 Shipments to Wisconsin are included with shipments to Michigan.

¹³Districts 3 and 6 shipments to Minnesota are included with shipments to Michigan.

¹⁴ Includes shipments to "Electric utilities" and to "All others" in Wisconsin.

15 Includes shipments to "Coke and gas plants" and to "All others" in Minnesota.

16 Includes shipments to "Electric utilities" and to "Coke and gas plants."

¹⁷Shipments to Minnesota and Missouri are included with shipments to Iowa.

¹⁸ Shipments to Minnesota are included with shipments to Iowa.

¹⁹ Shipments to Iwa are included with shipments to North and South Dakota.

20 Includes shipments to "Electric utilities" and "Coke and gas plants" and to "All others" in Minnesota and Missouri.

2 Shipments to Missouri are included with shipments to North and South Dakota.

²²District 20 shipments to North and South Dakota are included with shipments to Nebraska and Kansas.

²³Includes "Coal not sold in open market" and shipments to Iowa.
24District 8 shipments to Delaware and Maryland are included with shipments to Virginia.
25District 2 shipments to the District of Columbia are included with shipments to West Virginia.

²⁶Shipments to North Carolina are included with shipments to Virginia.

²⁷Shipments to Virginia are included with shipments to West Virginia.

²⁸Includes "Coal not sold in open market" and shipments to Delaware and Maryland.

AND STATE OF DESTINATION, AND CLASS OF CONSUMER; AND BY DISTRICT OR ORIGIN: 1954--Continued

percent of total 1954 production. See table 1.)

short tons)

| | | | | | District | of origin ¹ | | | | | |
|-----|---------------------|---------------------|-------------------|-------------------|--------------------|-----------------------------------------------------------------|------------------------------------------------------|------------|-------------------------------------------|----------------------------------------------------------------|-------------|
| | 9 West ntucky | 10 Illinois | ll Indiana | 12 Iowa | 13 Southeastern | 14, 15, and 18 Arkansas- Oklahoma, Southwestern, and New Mexico | 16 and 17 Northern and Southern Colorado | 20 Utah | 21 North Dakota- South Dakota | 19, 22, and 23 Wyoming, Montana, and Washington | Line no. |
| 1 | 2,436 2,436 | (⁵³) | ••• | ••• | | | | | | | 1 2 |
| l f | ••• | ` | ••• | | ••• | | | ••• | | | 3 |
| ſ | 4 | ••• | ••• | ••• | (54) (54) | | ••• | *** | ••• | | 4 |
| { | 4 | | ••• | ••• | (54) | | | ••• | ••• | | 5 |
| | 250 | 1,042 | 520 | 5537 | 54250 | 76 | 44 | 160 | 25 | 67 | 7 |
| | 250 | 1,042 | 520 | 5537 | 54250 | 76 | 44 | 160 | 25 | 67 | 8 |
| | ••• | | ••• | ••• | ••• | ••• | | | | | 9 |
| | 1,325 | 1,845 | ⁵⁶ 963 | (⁵⁵) | 3 | 91 | 43 | 32 | | 2,286 | 10 |
| | 1,325 | 1,845 | § 56963 | (⁵⁵) | 3 | 91 | 43 | } 32 | <i>]</i> | 105 | 11 |
| | ••• | l) | 1 | ••• | ••• | ••• | ••• | 1 | J | 2,181 | 12 |
| | 473 | ⁵³ 1,465 | (56) | ••• | | ••• | ••• | ••• | ••• | ••• | 13 |
| | 473 | ⁵³ 1,465 | (⁵⁶) | ••• | ••• | • • • • • • • • • • • • • • • • • • • • | ••• | ••• | ••• | ••• | 14 15 |
| | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• | ••• | | 12 |
| | 575 | | 30 | 8 | 245 | | | | | 10 | 16 |
| | 30 | 195 | 47 | 3 | 67 | 8 | 57 | 29 | 19 | 99 | 17 |
| | 16 | 176 | 26 | - 3 | 24 | -8 | -1 | -31 | -6 | 18 | 18 |
| { | 16 | } 176 | { 26 | -3 | 25 -1 | -18 10 | -1 | -31 | { -6 | -1 19 | 19 20 |

²⁹Includes shipments to "Electric utilities, and shipments to North Carolina."
 ³⁰Includes shipments to "Electric utilities" and "Coke and gas plants" and shipments to North Carolina.
 ³¹Includes shipments to the District of Columbia and to Virginia.
 ³²Includes shipments to "Coke and gas plants" and shipments to the District of Columbia and to Virginia.

33District 7 shipments to Georgia and Florida are included in shipments to South Carolina; District 13 shipments to South Carolina are

included with shipments to Georgia and Florida.

34Shipments to Georgia and Florida are included with shipments to Alabama and Mississippi.

35shipments to Arkansas, Louisiana, Oklahoma, and Texas are included with shipments to Tennessee.
36shipments to Tennessee are included with shipments to Arkansas, Louisiana, Oklahoma, and Texas.

3°Shipments to Tennessee are included with shipments to Arkansas, Mousicala, Oxianoma, and Texas and Texas are included with shipments to Alabama and Mississippi.

3°Shipments to "Electric utilities" are included with shipments to "Retail dealers."

3°Shipments to "All others" are included with shipments to "Coke and gas plants."

4°Includes "Coal not sold in open market" and shipments to Tennessee.

4°Shipments to Colorado are included with shipments to Utah.

4. Shipments to Colorado are included with shipments to Utah.
4. Shipments to Utah are included with shipments to Colorado.
4. Shipments to Utah are included with shipments to Utah.
4. Shipments to "Coke and gas plants" in Colorado and Utah.
4. Includes shipments to "Coke and gas plants" in Colorado and Utah.
4. Shipments to Utah are included with shipments to Montana, Idaho, Wyoming, New Mexico, Arizona, and Nevada.
4. Shipments to Washington, Oregon, and California are included with shipments to Montana, Idaho, Wyoming, New Mexico, Arizona, and Nevada.
4. Shipments to Washington, Oregon, and California are included with shipments to Montana, Idaho, Wyoming, New Mexico, Arizona, and Nevada.
4. Shipments to Washington, Oregon, and California are included with shipments to Utah.
4. Shipments to "Electric utilities" and shipments to "Coke and gas plants" in Washington, Oregon, and California.
5. Olincludes shipments to "Electric utilities" and shipments to "Coke and gas plants" in Washington, Oregon, and California.
5. Shipments to Washington, Oregon, and California are included with shipments "Destination unknown."

"Includes shipments to "Electric utilities" and shipments to Utah.

3 Shipments to Washington, Oregon, and California are included with shipments "Destination unknown."

5 Platricts 19, 22, and 23 shipments to Canada are included with shipments to Alaska.

5 Platrict 10 "Water transshipments via Great Lakes ports" are included with "Railroad fuel" for "Canadian companies."

5 Platrict 13 "Water transshipments via Tidevater ports" are included with "Shipments by truck."

5 Railroad fuel" for "United States companies" is included with "Shipments by truck."

⁵⁶Figures for "Canadian companies" are included with figures for "United States companies."

DEFINITION OF BITUMINOUS COAL AND LIGNITE PRODUCING DISTRICTS

DISTRICT 1.--EASTERN PENNSYLVANIA

Pennsylvania

Armstrong County (part) .-- All mines east of the Allegheny River, and those mines served by the Pittsburgh and Shawmut

Railroad located on the west bank of the river.

Fayette County (part) .-- All mines located on and east of the line of Indian Creek Valley branch of the Baltimore and Ohio

Indiana County (part) .-- All mines not served by the Saltsburg branch of the Pennsylvania Railroad.

Westmoreland County (part) .-- All mines served by the Pennsylvania Railroad from Torrance, east.

All mines in the following counties:

Bedford Cameron Clinton Huntingdon Blair Centre Elk Jefferson Potter Bradford Clarion Lycoming Forest Somerset Cambria Clearfield Tioga Fulton McKean

Maryland .-- All mines in the State.

West Virginia. -- All mines in the following counties:

Grant Mineral Tucker

DISTRICT 2 .-- WESTERN PENNSYLVANTA

Pennsylvania

Armstrong County (part) .-- All mines west of the Allegheny River except those mines served by the Pittsburgh and Shawmut Railroad.

Fayette County (part) .-- All mines except those on and east of the line of Indian Creek Valley branch of the Baltimore and Ohio Railroad.

Indiana County (part) .-- All mines served by the Saltsburg branch of the Pennsylvania Railroad.

Westmoreland County (part) .-- All mines except those served by the Pennsylvania Railroad from Torrance, east.

All mines in the following counties:

Butler Allegheny Lawrence Venango Beaver Greene Mercer Washington

DISTRICT 3 .-- NORTHERN WEST VIRGINIA

West Virginia

Nicholas County (part) .-- All mines served by or north of the Baltimore and Ohio Railroad.

All mines in the following counties:

Taylor Webster Barbour Doddridge Jackson Monongalia Randolph Ritchie Wetzel Braxton Gilmer Lewis Pleasants Tyler Wirt. Calhoun Harri son Marion Preston Roane Upshur Mood

DISTRICT 4. -- OHIO. -- All mines in the State.

DISTRICT 5 .-- MICHIGAN .-- All mines in the State.

DISTRICT 6 .-- PANHANDLE

West Virginia. -- All mines in the following counties:

Ohio Brooke Hancock Marshall

DISTRICT 7 .-- SOUTHERN NO. 1

West Virginia

Fayette County (part).--All mines east of Gauley River and all mines served by the Gauley River branch of the Chesapeake and Ohio Railroad and mines served by the Virginian Railway.

McDowell County (part) .-- All mines in that portion of the county served by the Dry Fork Branch of the Norfolk and Western Railroad and east thereof.

Raleigh County (part) .-- All mines except those on the Coal River Branch of the Chesapeake and Ohio Railroad and north thereof.

Wyoming County (part) .-- All mines in that portion served by the Gilbert branch of the Virginian Railway lying east of the mouth of Skin Fork of Guyandot River and in that portion served by the main line and the Glen Rogers branch of the Virginian Railway.

All mines in the following counties:

Greenbrier Monroe Pocahontas Summers Mercer

Virginia

Buchanan County (part). -- All mines in that portion of the county served by the Richlands-Jewell Ridge branch of the Norfolk and Western Railroad and in that portion on the headwaters of Dismal Creek east of Lynn Camp Creek (a tributary of Dismal Creek).

Tazewell County (part).--All mines in those portions of the county served by the Dry Fork branch to Cedar Bluff and from Bluestone Junction to Boissevain branch of the Norfolk and Western Railroad and Richlands-Jewell Ridge branch of the Norfolk and Western Railroad.

All mines in the following counties:

Montgomery Wythe Giles Craig Pulaski

DISTRICT 8 .-- SOUTHERN NO. 2

West Virginia

Fayette County (part) .-- All mines west of the Gauley River except mines served by the Gauley River branch of the Chesapeake and Ohio Railroad.

McDowell County (part).--All mines west of and not served by the Dry Fork branch of the Norfolk and Western Railroad.
Nicholas County (part).--All mines in that part of the county south of and not served by the Baltimore and Ohio Railroad.
Raleigh County (part).--All mines on the Coal River branch of the Chesapeake and Ohio Railroad and north thereof.
Wyoming County (part).--All mines in that portion served by the Gilbert branch of the Virginian Railway and lying west of

the mouth of Skin Fork of Guyandot River.

All mines in the following counties:

Boone Putnam Clay Lincoln Mason Wayne Cabell Kanawha Logan Mingo

DEFINITION OF BITUMINOUS COAL AND LIGNITE PRODUCING DISTRICTS--Continued DISTRICT 8 .-- SOUTHERN NO. 2-- Continued Virginia Buchanan County (part). --All mines in the county, except in that portion on the headwaters of Dismal Creek, east of Lynn Camp Creek (a tributary of Dismal Creek) and in that portion served by the Richlands-Jewell Ridge branch of the Norfolk and Western Railroad. Tazewell County (part).--All mines in the county except in those portions served by the Dry Fork branch of the Norfolk and Western Railroad and Branch from Bluestone Junction to Boissevain of Norfolk and Western Railroad and Richlands-Jewell Ridge branch of the Norfolk and Western Railroad. All mines in the following counties: Dickinson Russell Wise Scott Lee Kentucky. -- All mines in the following counties in eastern Kentucky: Clav Leslie Pike Rell Harlan Martin Knox Boyd Elliott Rockcastle Jackson Laurel Letcher Morgan Breathitt McCreary Floyd Johnson Lawrence Owsley Wayne Carter Greenup Knott Lee Magoffin Perry Whitley Tennessee .-- All mines in the following counties Anderson Cumberland Overton Fentress Campbell Roane Claiborne Scott Morgan North Carolina .-- All mines in the State. DISTRICT 9 .-- WEST KENTUCKY Kentucky .-- All mines in the following counties in western Kentucky: Butler Hancock Todd McLean Christian Henderson Muhlenberg Union Crittenden Hopkins Warren Ohio Daviess Webster Logan Simpson DISTRICT 10 .- ILLINOIS .-- All mines in the State. DISTRICT 11 .-- INDIANA .-- All mines in the State. DISTRICT 12 .-- IOWA .-- All mines in the State. DISTRICT 13.--SOUTHEASTERN Alabama .-- All mines in the State. Georgia. -- All mines in the following counties: Dade Walker Tennessee .-- All mines in the following counties: Bledsoe McMinn Sequatchie Hamilton Warren Grundy Marion Rhea Van Buren White DISTRICT 14. -- ARKANSAS - OKLAHOMA Arkansas .-- All mines in the State. Oklahoma. -- All mines in the following counties: Haskell Le Flore Sequoyah DISTRICT 15 .-- SOUTHWESTERN Kansas .-- All mines in the State. Texas .- All mines in the State. Missouri .-- All mines in the State. Oklahoma .-- All mines in the following counties: Coal Okmulgee Wagoner Latimer Rogers Pittsburg Craig Muskogee Tulsa DISTRICT 16. -- NORTHERN COLORADO All mines in the following counties in the State: Adams Boulder Elbert Jackson Larimer Arapahoe Douglas El Paso Jefferson Weld DISTRICT 17 .- SOUTHERN COLORADO Colorado .-- All mines except those included in District 16. New Mexico .-- All mines except those included in District 18. DISTRICT 18. -- NEW MEXICO New Mexico .-- All mines in the following counties: San Miguel Grant McKinley Sandoval Socorro Lincoln Rio Arriba San Juan Santa Fe Arizona. - All mines in the State. California .-- All mines in the State. DISTRICT 19. -- WYOMING Wyoming .-- All mines in the State.

Idaho .-- All mines in the State.

DISTRICT 20. -- UTAH. -- All mines in the State.

DISTRICT 21.--NORTH DAKOTA-SOUTH DAKOTA.--All mines in North Dakota and South Dakota.

DISTRICT 22. -- MONTANA. -- All mines in the State.

DISTRICT 23, -- WASHINGTON

Washington .-- All mines in the State.

Oregon .-- All mines in the State.

Alaska . -- All mines in the Territory .

DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS WASHINGTON 25, D. C.

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVO





UNITED STATES DEPARTMENT OF

COMMERCE

SINCLAIR WEEKS, SECRETARY

WASHINGTON 25, D. C.



For Release January 16, 1956

NATURAL GAS LIQUIDS INDUSTRIES SHIPMENTS WERE \$637 MILLION IN 1954 CENSUS

Value of shipments of the natural gasoline and cycle condensate industries

was \$637 million in 1954, according to preliminary results of the 1954 Census of

Mineral Industries announced by the Bureau of the Census, United States Department of

Commerce. The quantity of natural gas liquids shipped by these industries amounted to

252 million barrels, representing a fourfold increase since 1939, the year covered by

the last Census of Mineral Industries. Natural gasoline and cycle condensate ship
ments only doubled, while 1954 shipments of liquefied petroleum gases were more than

thirteen times those in 1939. These liquids were produced in 1954 by processing nearly

8 trillion cubic feet of natural gas.

The number of natural gasoline and cycle condensate establishments in 1954 was 564. Employment at these establishments increased from 10 to 16 thousand between 1939 and 1954. During the same period horsepower per employee more than doubled, amounting to nearly 3 million in 1954. Capital expenditures for new construction, major alterations, and new and used machinery during the year amounted to \$110 million, as compared with \$13 million in 1939.

Natural gas liquids were produced in 20 States in 1954, although over 50 percent of the total production was in the State of Texas. The second largest producing State was California with 12 percent of the total, followed by Oklahoma and Louisiana, each with 9 percent. The following table provides comparisons of data for the natural gas liquids industries for 1954 and 1939.

NATURAL GASOLINE AND CYCLE CONDENSATE INDUSTRIES: 1954 AND 1939

| Item | 1954 | 1939 |
|--------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------|
| Number of establishments | 564 | 734 |
| Value of shipments | 637 | 96 |
| Natural gas liquids shippedl,000,000 barrels Natural gasoline and cycle condensatedo Liquefied petroleum gasdodo | 252 108 124 20 | 61 51 9 1 |
| Natural gas processedl,000,000,000 cubic feet | 7,614 | 2,200 |
| Number of employees | 16 76 | 10 18 |
| Capital expenditures | 110 2,947 67 | 13 772 (NA) |

NA Not available.

1954 Census of Mineral Industries

October 1956

Series:

M1-13-1

CRUDE PETROLEUM AND NATURAL GAS

The value of shipments of the crude petroleum and natural gas industries in 1954 amounted to approximately \$7 billion, with \$6 billion for the value of oil shipped and nearly \$1 billion for the value of gas. The principal expenses for these oil- and gas-field operations included \$0.7 billion for wages and salaries, \$0.7 billion for supplies, and \$1.5 billion for contract work. The cost of purchased machinery installed was \$0.6 billion. The total horsepower of equipment available for use in these industries amounted to 9 million. Water intake for use during the year was 80 billion gallons.

Oil- or gas-field operations were reported for 1954 in 36 States and Alaska, although there were no producing operations in 6 of the States and in Alaska. Texas accounted for 42 percent of the total value of shipments of these industries. In quantity terms Texas shipped 42 percent of all crude petroleum and 52 percent of all natural gas. The principal expenses for oil- and gas-field operations in Texas accounted for 37 percent of the United States total. The second largest oil and gas producing State was California, accounting for 15 percent of the total value of shipments, shipping 16 percent of the total quantity of crude petroleum, but only 5 percent of all gas. The third ranking State was Louisiana, accounting for nearly 11 percent of all crude petroleum and 16 percent of all gas. The other States with value of oil and gas shipments amounting to more than \$100 million, ranked by value of shipments, were Oklahoma, Kansas, New Mexico, Wyoming, Illinois, and Colorado.

Shipments of crude petroleum in 1954 were about 75 percent greater than in 1939, the year covered by the preceding Census of Mineral Industries; and shipments of natural gas were 3.5 times as great as in 1939. Employment in these industries increased by only about 10 percent between 1939 and 1954, while horsepower of available equipment nearly tripled.

The 1954 minerals census included reports for about 12 thousand establishments operating oil or gasfield properties, but about 700 of these were primarily engaged in performing contract services for others, and were not classified in the crude petroleum or natural gas industries. Data for them, however, are included in Tables 3, 4, and 5 of this report and statistics for them have been included in the 1954 minerals census preliminary report MI-13-3, "Oil and Gas Field Contract Services."

The 1954 minerals census excludes establishments with value of shipments or expenditures for development work less than \$500. The Census, however, attempted to include all operators of properties, whether or not they had employees, for which shipments or expenditures exceeded these amounts. A preliminary analysis of the census coverage indicates that the methods used in developing a mailing list and in collecting census reports, did not provide altogether complete coverage in certain areas, although the coverage appears to average somewhat better than that of the 1939 minerals census. Preliminary figures indicate that the 1954 census covered about 96 percent of the total shipments of crude petroleum and a somewhat higher percentage of total shipments of natural gas. The coverage of number of producing wells was somewhat less. However, it amounted to nearly complete coverage of wells other than stripper wells and wells on farms, with the most significant undercoverage in stripper areas of Pennsylvania, Ohio, Oklahoma, and Texas.

The 1954 minerals census shows a total of 426 thousand producing oil wells, amounting to an increase of about 41 percent from 1939. It shows a total of 68 thousand producing gas wells, an increase of 44 percent since 1939. In addition, the report shows 29 thousand shut-in oil wells during December 1954 and 6 thousand shut-in gas wells. The census shows that 52 thousand wells were drilled during 1954 as compared with 23 thousand in 1939. Of the 1954 total, 33 thousand were producing wells and 19 thousand were dry holes and service wells.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

The 1954 and 1939 censuses obtained detailed statistics on the footage of wells drilled and completed during the year and on the costs of drilling and equipping these wells. In 1954, the total footage drilled was 208 million feet as compared with 72 million feet in 1939. The total cost of drilling and equipping wells in 1954 was \$2.3 billion. Oil wells cost \$1.6 billion, gas wells \$0.3 billion, and dry holes and service wells \$0.6 billion. Of the total cost for drilling and equipping wells, \$1.0 billion was paid to contractors and \$1.3 billion was borne by operators of oil- and gas-field properties. The percent of total drilling costs paid to contractors increased from 37 percent in 1939 to 44 percent in 1954. The \$1.31 billion borne directly by operating companies was distributed as \$0.71 billion for drilling, \$0.35 billion for casing, and \$0.26 billion for equipment for flowing and pumping. The average depth of wells drilled in 1954 was nearly 4,000 feet, as compared with 3,200 feet for 1939. The average cost per well for drilling and equipping in 1954 was \$51 thousand for oil wells, \$69 thousand for gas wells, \$35 thousand for dry holes, and \$9 thousand for service wells. For 1939, the corresponding costs were \$19 thousand for oil wells, \$13 thousand for gas wells, and 14 thousand for dry holes. The average cost of drilling and equipping an oil well ranged from \$4 thousand in Pennsylvania and New York to \$123 thousand in North Dakota, with an average of \$54 thousand for Texas and \$95 thousand for California.

Separate figures are shown for 1954 for offshore operations. The number of producing offshore wells drilled was 212 and the number of dry holes was 36. The average depth of offshore oil wells was over 8 thousand feet, and the average depth of offshore gas wells was 11 thousand feet. The average cost of drilling and equipping an offshore oil well was nearly \$200 thousand, and the average of such costs for gas wells was nearly \$600 thousand.

The "Crude petroleum" industry, as defined in the Standard Industrial Classification, represents establishments primarily engaged in producing crude petroleum. Such oil field activities as exploration, drilling wells, equipping wells, and emulsion breaking operations are included. The industry is also defined as including the mining of oil sands and oil shale, and the recovery of oil therefrom, but no such operations were reported for 1954. (The census excludes operations of the Federal government).

The "Natural gas" industry is similarly defined as establishments primarily engaged in producing natural gas. Gas field activities such as exploration, drilling wells, and equipping wells are included.

Establishments primarily engaged in performing oil-and gas-field services on contract for others are classified in separate industries. A preliminary 1954 minerals census report M1-13-3, "Oil and Gas Field Contract Services," has been issued on such operations. The recovery of natural gas liquids from natural gas is also classified separately and a report M1-13-2 "Natural Gasoline and Cycle Condensate" has been issued on such operations.

For census purposes, an oil- or gas-field establishment is defined as all oil- and gas-field operations of one company in one State. Thus, a company operating both oil and gas wells in the same State made only one report and the report was classified by industry on the basis of whether the greater total value was for oil or gas. On this basis, the 1954 total value of shipments for the "Crude petroleum" industry was \$6.6 billion, and the total value of shipments of the "Natural gas" industry was only \$0.4 billion, although the crude petroleum industry showed shipments of gas valued at \$0.6 billion. Separate statistics are shown for these two industries in Table 1. It is expected that the final census report will show separately statistics for establishments representing oil wells only, both oil and gas wells, and gas wells only.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Crude Petroleum and Natural Gas," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 minerals census is the thirteenth such census of the United States. Prior to 1939 minerals censuses had been conducted at about ten year intervals for a century. Present legislation provides for such a census every five years.

(Excludes establishments primarily engaged in performing contract services. Also excludes for 1954 establishments with value of production and with expenditures less than \$500; for 1939, less than \$2,500.)

| | | 1954 | | |
|----------------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------|
| Item | Total | | nts primarily producing | 1939 |
| | 10041 | Crude petroleum | Natural gas | |
| Number of establishments ¹ | 11,376 | 9,957 | 1,419 | 8,605 |
| Crude petroleum, total | 2,170,864 | 2,144,953 | 25,911 | ² 1,228,134 |
| Shippeddodododododododododododododododododo | 2,169,227 1,637 | 2,143,345 1,608 | 25,882 29 | (NA) (NA) |
| Field condensate and drips shippeddodo | 25,473 | 20,994 | 4,479 | ² 859 |
| Natural gas produced, total | 9,936,362 | 7,526,996 | 2,409,366 | 2,929,185 |
| From oil wellsdodododo | 3,514,683 6,421,679 | 3,410,105 4,116,891 | 104,578 2,304,788 | 1,504,627 1,424,558 |
| Natural gas shipped ³ dodo | 7,973,180 | 5,758,012 | 2,215,168 | 2,287,413 |
| Value of shipments, total\$1,000 | 7,037,383 | 6,636,537 | 400,846 | ² 1,375,954 |
| Crude petroleum. do Field condensate and drips. do Natural gas ³ . do | 6,008,446 76,799 923,303 | 5,935,638 63,683 609,473 | 72,808 13,116 313,830 | 1,251,905 1,180 115,350 |
| Other productsdodododododododododododododododo | 170 28,665 | 170 27 , 573 | 1,092 | 251 7,268 |
| Number of employees, total ⁴ | 150,594 | 140,120 | 10,474 | 136,051 |
| Production and development workers | 109,482 41,112 | 101,409 38,711 | 8,073 2,401 | 105,505 30,546 |
| Man-hours worked by production and development workers | 216,986 | 201,621 | 15,365 | 190,674 |
| Principal expenses, total | 2,907,420 | 2,741,496 | 165,924 | 538,864 |
| Wages of production and development workers | 461,522 237,264 680,060 6,648 35,050 30,397 | 432,985 225,446 636,098 6,411 33,432 29,871 | 28,537 11,818 43,962 237 1,618 526 | 155,700 79,199 78,538 (NA) 19,647 6,746 |
| Contract workdo | 1,456,479 | 1,377,253 585,197 | 79,226 28,953 | 199,034 (NA) |
| Capital expenditures (development work, construction, machinery, | | | | V-207 |
| and equipment)do | 1,895,596 | 1,775,722 | 119,874 | (NA) |
| For machinery and equipment onlydo | 583,424 | 546,357 | 37,067 | 189,410 |
| Horsepower rating of power equipment ⁵ | 9,175 | 8,676 | 499 | 3,397 |
| Water intake ⁶ ,000,000 gallons | 80,553 | 79,725 | 828 | (NA) |

NA Not available.

¹For Census purposes, an oil- or gas-field mineral establishment was defined as all oil- and gas-field properties in one State operated by one company. Only one consolidated report was required in the census for all operations of each company in each State.

²Represents production.

³Represents deliveries to distributors and transmission companies; to domestic, commercial, and industrial consumers; and net deliveries

to natural gasoline plants.

'For 1954, represents an average of 4 quarterly figures for the payroll periods ending nearest the 15th of March, May, August, and November. For 1999, represents an average of 12 monthly figures for the payroll period ending nearest the 15th of each month.

'Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

⁶Represents the intake of both fresh and brackish water from publicly and privately owned systems.

| _ | Tab | le 2PRINCIPAL ST | ATISTICS FOR THE | CRUDE PETROLEUM AND |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------|
| | | | Middle | Atlantic |
| Line | Item | United States, | | |
| no. | | total | New York | Pennsylvania |
| 1 | Number of establishments ¹ | 11,376 | 253 | 904 |
| 2 | Crude petroleum, total | 2,170,864 | 2,633 | 8,735 |
| 3 4 | Shippeddodododo | 2,169,227 1,637 | 2,572 61 | 8,734 1 |
| 5 | Field condensate and drips shippeddodo | 25,473 | ••• | 6 |
| 6 | Natural gas produced, total1,000,000 | 9,936,362 | 3,890 | 130,240 |
| 7 8 | From oil wellsdododo | 3,514,683 6,421,679 | 718 3,172 | 2,554 127,686 |
| 9 | Natural gas shipped ³ dodo | 7,973,180 | 2,756 | 124,117 |
| 10 | Value of shipments, total\$1,000 | 7,037,383 | 10,174 | 66,287 |
| 11 12 13 14 15 | Crude petroleum | 6,008,446 76,799 923,303 170 28,665 | 8,829 1,339 6 | 29,924 20 35,978 23 342 |
| 16 | Number of employees, total ⁴ | 150,594 | 1,149 | 5,297 |
| 17 18 | Production and development workers. | 109,482 41,112 | 1,013 136 | 4,610 687 |
| 19 | Man-hours worked by production and development workers | 216,986 | 1,933 | 8,884 |
| 20 | Principal expenses, total\$1,000 | 2,907,420 | 8,071 | 47,853 |
| 21 22 23 24 25 26 27 | Wages of production and development workersdo Salaries of all other employeesdo Suppliesdo Gas purchased for gas lift and repressuringdo Purchased fueldo. Purchased electric energydo Contract workdo | 461,522 237,264 680,060 6,648 35,050 30,397 1,456,479 | 3,257 492 2,715 15 356 229 1,007 | 14,694 2,674 6,169 150 1,148 1,484 21,534 |
| 28 | Purchased machinery installeddo | 614,150 | 834 | 5,149 |
| 29 | Capital expenditures (development work, construction, machinery, and equipment)do | 1,895,596 | 2,977 | 15,036 |
| 30 | For machinery and equipment onlydo | 583,424 | 1,210 | 5,520 |
| 31 | Horsepower rating of power equipment ⁵ | 9,175 | 67 | 306 |
| 32 | Water intake ⁶ | 80,553 | 1,870 | 6,375 |

See footnotes at end of table.

| NATURAL GAS I | NDUSTRIES, BI | GEOGRAPHIC L | UIVI CMUICIVIC | STATES: 1954 | | | | | | |
|-----------------|----------------|-----------------|----------------|-----------------|---------------------|-------------------|-------------------------------------------|------------------|---------------------------------------------------|-------------|
| | East Nort | h Central | | | West Nort | h Central | | South A | Atlantic | |
| Ohio | Indiana | Illinois | Michigan | North Dakota | Nebraska | Kansas | Iowa, Missouri, and South Dakota | West Virginia | Meryland, Virginia, Georgia, and Florida | Line no. |
| 527 | 243 | 509 | 180 | 33 | 59 | 866 | 37 | 730 | 46 | 1 |
| 2,912 | 8,688 | 60,614 | 11,148 | 5,606 | 6,915 | 105,522 | 119 | 2,602 | 548 | 2 |
| 2,910 | 8,686 2 | 60,612 2 | 11,148 | 5,521 85 | 6 , 909 6 | 105,478 44 | 118 1 | 2,600 2 | 548 | 3 4 |
| 2 | | 1 | 6 | | | 21 | | 5 | | 5 |
| 24,965 | 2,265 | 10,846 | 10,442 | 2,548 | 6,969 | 360,602 | 38 | 168,716 | 2,830 | 6 |
| 2,636 22,329 | 979 1,286 | 10,752 94 | 6,507 3,935 | 2,380 168 | 2,679 4,290 | 15,681 344,921 | 16 22 | 6,537 162,179 | 48 2,782 | 7 8 |
| 23,857 | 1,662 | 3,566 | 5,822 | 1,726 | 5,358 | 352,859 | 7 | 161,949 | 2',782 | 9 |
| 16,831 | 25,965 | 180,900 | 34,165 | 12,028 | 19,921 | 337,565 | 284 | 53,226 | 1,862 | 10 |
| 7,980 | 25,384 | 178,757 | 32,143 | 11,951 | 19,074 | 292,222 | 280 | 7,654 | 1,069 | 11 |
| 8,594 | 362 | 466 | 11 1,165 | 62 | 842 | 41,249 | 1 3 | 12 45,469 | 793 | 12 13 |
| 252 | 219 | 1,671 | 846 | 15 | 5 | 4,000 | ::: | 91 | | 14 15 |
| 2,049 | . 974 | 6,065 | 1,365 | 671 | 284 | 9,109 | 105 | 3,702 | 291 | 16 |
| 1,683 366 | 764 210 | 5,200 865 | 1,159 206 | 374 297 | 232 52 | 7,381 1,728 | 37 68 | 3,326 376 | 126 165 | 17 18 |
| 2,744 | 1,232 | 10,068 | 2,309 | 803 | 457 | 14,151 | 69 | 5,580 | 261 | 19 |
| 15,058 | 12,363 | 78,276 | 19,199 | 26,627 | 10,513 | 136,083 | 3,325 | 23,813 | 5,972 | 20 |
| 4,086 1,477 | 2,301 1,027 | 20,696 4,278 | 5,014 1,044 | 1,808 | 1,055 | 27,789 | 133 342 | 9,304 1,174 | 509 | 21 22 |
| 3,143 | 3,112 | 15,318 | 5,136 | 1,654 5,864 | 1,704 | 9,114 29,946 | 282 | 5,578 | 977 1,320 | 23 |
| 143 | 22 286 | 14 1,486 | 330 | 622 | 114 | 52 5,864 | 11 | 24 206 | 24 | 24 25 |
| 6,125 | 310 5,305 | 2,254 34,230 | 1,62 7,513 | 28 16,651 | 49 7,371 | 3,604 59,714 | 2,554 | 49 7,478 | 3,141 | 26 27 |
| 3,155 | 1,943 | 18,993 | 2,905 | 8,335 | 5,450 | 35 ,5 11 | 288 | 3,714 | 312 | 28 |
| 8,185 | 4,863 | 41,368 | 6,363 | 13,765 | 11,920 | 72,789 | 1,246 | 12,191 | 1,558 | 29 |
| 3,973 | 2,072 | 17,394 | 2,838 | 8,278 | 5,399 | 36,795 | 347 | 4,181 | 400 | 30 |
| 89 | 53 | 330 | 105 | 30 | 31 | 638 | 3 | 194 | 9 | 31 |
| 270 | 557 | 7,457 | 395 | 127 | 176 | 7,309 | 2 | 368 | 5 | 32 |

| | | | East South Central | |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------|--------------------------------------------|
| Line | Item | Kentucky | Mississippi | Tennessee and Alabama |
| 1 | Number of establishments ¹ | 329 | 117 | 47 |
| 2 | Crude petroleum, total | 11,746 | 32,151 | 1,603 |
| 3 | Shippeddododododododo | 11,743 3 | 32,147 4 | 1,598 5 |
| 5 | Field condensate and drips shippeddodo | 3 | 772 | |
| 6 | Natural gas produced, total | 72,066 | 200,437 | 190 |
| 7 8 | From oil welladodododododo | 2,226 69,840 | 53,837 146,600 | 96 94 |
| 9 | Natural gas shipped ³ dodo | 67,697 | 135,591 | 94 |
| 10 | Value of shipments, total\$1,000 | 53,130 | 94,612 | 3,205 |
| 11 12 13 14 15 | Crude petroleum | 34,527 14 18,450 | 79,608 2,296 12,418 1 289 | 3,172 33 |
| 16 | Number of employees, total ⁴ | 2,820 | 2,206 | 138 |
| 17 18 | Production and development workers | 2,524 296 | 1,072 1,134 | 110 28 |
| 19 | Man-hours worked by production and development workers | 4,495 | 2,240 | 366 |
| 20 | Principal expenses, total\$1,000 | 23,899 | 37,486 | 3,404 |
| 21 22 23 24 25 26 27 | Wages of production and development workersdo Salaries of all other employeesdo Suppliesdodo Gas purchased for gas lift and repressuringdo. Purchased fueldo. Purchased electric energydo. Contract workdo | 7,286 1,194 6,047 19 334 428 8,591 | 5,092 3,259 9,646 573 687 198 18,031 | 452 158 965 25 48 1,756 |
| 28 | Purchased machinery installed | 5,768 | 8,478 | 114 |
| 29 | Capital expenditures (development work, construction, machinery, and equipment)do | 14,639 | 19,799 | 458 |
| 30 | For machinery and equipment onlydo | 5,321 | 5,051 | 82 |
| 31 | Horsepower rating of power equipment ⁵ | 121 | 128 | 5 |
| 32 | Water intake ⁶ | 1,773 | 343 | 2 |

¹See Table 1, footnote 1.

²Figures for Nevada are included with those for Utah. No 1954 production or shipments were reported for Idaho and Arizona.

³See Table 1, footnote 3.

| | West Sout | th Central | | | | Moun | tain | | | Pac | ific | |
|----------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------|-------------------------------------|----------------------------------------------------------------|-------------------------------------|----------------------------------------|
| Arkansas | Louisiana | Oklahoma | Texas | Montana | Wyoming | Colorado | New Mexico | Utah | Idaho, Arizona, and Nevada | California | Washington and Oregon | Line no. |
| 201 | 455 | 1,507 | 2,804 | 207 | 208 | 148 | 254 | 41 | 22 | 639 | 10 | 1 |
| 26,566 | 229,262 | 166,572 | 907,455 | 13,811 | 89,799 | 44,377 | 73,199 | ² 1,882 | (²) | 356,399 | | 2 |
| 26,556 10 | 229,224 38 | 166,333 239 | 907,165 290 | 13,771 40 | 89 , 722 77 | 44,312 65 | 73,141 58 | ² 1,880 | (²) (²) | 355,799 600 | ::: | 3 4 |
| 26 | 10,642 | 206 | 12,924 | 3 | 96 | 38 | 572 | 5 | ••• | 145 | | 5 |
| 49,377 | 1,539,611 | 778,273 | 5,135,348 | 30,138 | 110,174 | 66,280 | 451,902 | ² 16,646 | (²) | 761,569 | | 6 |
| 40,492 8,885 | 396,059 1,143,552 | 439,019 339,254 | 1,650,978 3,484,370 | 2,426 27,712 | 62,539 47,635 | 37,399 28,881 | 200,390 251,512 | ² 408 16,238 | (²) | 577,327 184,242 | ::: | 7 8 |
| 28,059 | 1,298,986 | 578,304 | 4,164,779 | 26,563 | 69,364 | 41,765 | 425,316 | 15,838 | ••• | 434,363 | | 9 |
| 73,345 | 845,218 | 516,292 | 2,986,532 | 32,390 | 222,681 | 127,157 | 234,995 | ² 6,689 | (²) | 1,081,929 | | 10 |
| 70,939 59 2,145 | 671,151 32,265 138,516 | 459,154 594 52,871 | 2,576,232 38,925 362,650 | 30,449 15 1,894 | 213,481 313 7,551 | 122,881 105 4,130 | 200,429 1,602 32,148 | ² 4,421 15 2,253 | (²) | 926,735 480 151,922 | ••• | 11 12 13 |
| 202 | 3,286 | 28 3,645 | 42 8,683 | 32 | 13 1,323 | 41 | 20 796 | | ••• | 10 2,782 | | 14 |
| 1,552 | 15 , 535 | 17,655 | 53,280 | 1,570 | 3,652 ⁻ | 1,810 | 3,197 | 558 | 123 | 15,352 | 85 | 16 |
| 1,210 342 | 11,754 3,781 | 13,323 4,332 | 35,537 17,743 | 878 692 | 2,539 1,113 | 928 882 | 2,214 983 | 307 251 | 82 41 | 11,090 4,262 | 9 76 | 17 18 |
| 2,407 | 24,157 | 25,432 | 73,517. | 1,799 | 4,924 | 1,909 | 4,474 | 628 | 172 | 21,956 | 19 | 19 |
| 25 , 927 | 457,144 | 285,086 | 1,084,690 | 33,944 | 88,782 | 55,910 | 107,976 | 14,390 | 5,479 | 295,112 | 1,038 | 20 |
| 4,617 1,967 6,986 1,048 376 521 10,412 | 57,589 23,067 126,906 655 3,727 915 244,285 | 51,380 25,071 58,884 431 3,416 3,316 142,588 | 158,678 106,335 241,914 3,194 9,998 8,926 555,645 | 3,820 3,751 6,001 3 401 171 19,797 | 11,755 6,650 19,173 85 1,186 864 49,069 | 4,435 5,073 12,267 3 411 172 33,549 | 10,104 5,481 30,303 85 612 465 60,926 | 1,554 1,371 3,812 293 3 7,357 | 326 195 1,458 24 | 53,743 28,773 75,389 152 3,082 6,122 127,851 | 45 446 22 2 523 | 21 22 23 24 25 26 27 |
| 3,463 | 105,951 | 68,070 | 231,603 | 5,208 | 18,340 | 12,808 | 22,916 | 860 | 366 | 43,598 | 18 | 28 |
| 10,213 | 372,027 | 191,879 | 688,998 | 23,096 | 60,850 | 38,629 | 87,792 | 5,751 | 1,583 | 187,529 | 92 | 29 |
| 4,541 | 88,906 | 67,832 | 218,211 | 8 , 514 | 17,915 | 11,473 | 23,070 | 461 | 59 | 43,567 | 14 | 30 |
| 111 | 924 | 879 | 3,048 | 110 | 239 | 122 | 188 | 24 | 9 | 1,411 | 1 | 31 |
| 732 | 5,899 | 11,854 | 26,854 | 98 | 2,157 | 346 | 326 | 53 | 3 | 5,202 | | 32 |

⁴See Table 1, footnote 4. ⁵See Table 1, footnote 5. ⁶See Table 1, footnote 6.

(Includes data for about 700 establishments primarily engaged in performing contract services as well as data for establishments classified in the crude petroleum and natural gas industries. For a discussion of the coverage represented by these figures see the text of this report.)

| | Number | of wells | in December | 1954 | field co | troleum and ondensate oped ¹ | 1 | Natural gas | |
|-------------------------------------------------------------------|--------------------|----------------------|------------------|----------------------|------------------------|-----------------------------------------------|---------------------------|----------------------------|--------------------|
| Geographic division, State, and year | Oil we | ells² | Gas we | ells ² | Quantity | Value at | Produced | Shipp | ped |
| | Producing | Shut-in ³ | Producing | Shut-in ³ | , 4,44 | wells | Troduced | Quantity | Value at wells |
| | | | | | (1,000 barrels) | (\$1,000) | (1,000,000 cubic feet) | (1,000,000 cubic feet) | (\$1,000) |
| United States, total 1954 1939 | 426,089 300,179 | 29,088 12,834 | 68,499 47,466 | 6,025 4,850 | 2,226,013 1,228,993 | 6,172,454 1,253,084 | 10,024,521 2,929,185 | 8,055,338 2,287,413 | 933,157 115,350 |
| Middle Atlantic; New York: 1954. 1939. | 15,562 12,837 | 975 197 | 1,223 1,892 | 27 119 | 2,802 3,898 | 9,619 8,018 | 3,890 31,328 | 2,756 29,120 | 1,339 4,040 |
| Pennsylvania: 1954. 1939. | 50,256 49,172 | 5,412 1,223 | 16,329 16,312 | 849 1,340 | 8,807 14,063 | 30,172 28,788 | 132,835 91,762 | 126,4 <i>5</i> 7 82,614 | 36,658 16,220 |
| East North Central: Ohio: 1954 | 9,064 10,250 | 453 181 | 4,568 4,761 | 75 784 | 3,005 2,030 | 8,231 2,471 | 25,198 37,752 | 24,090 34,000 | 8,678 6,925 |
| Indiana: 1954 | 3,529 1,194 | 72 27 | 235 691 | 11 56 | 8,899 1,645 | 26,003 1,569 | 2,278 1,331 | 1,675 705 | 365 115 |
| Illinois: 1954. 1939. | 25,872 16,935 | 1,650 663 | 1,742 46 | 14 2 | 63,458 93,594 | 187,127 95,974 | 10,868 8,980 | 3,586 2,800 | 469 84 |
| Michigan: 1954 1939 | 3,943 2,610 | 76 17 | 245 392 | 36 8 | 11,430 23,282 | 32,959 20,809 | 10,873 12,712 | 6,242 9,316 | 1,249 1,209 |
| West North Central: North Dakota: 1954 ⁴ | 445 | 7 | 27 | 7 | 5,780 | 12,553 | 2,683 | 1,856 | 67 |
| Nebraska: 1954 ⁴ | 511 | 18 | 45 | 24 | 7,588 | 20,934 | 7,052 | 5,438 | 855 |
| Kansas: 1954 1939 | 33,704 18,555 | 1,882 1,102 | 4,249 1,683 | 223 103 | 110,472 57,370 | 306,036 59,283 | 394,909 83,960 | 386,065 78,080 | 45,119 3,444 |
| Missouri and South Dakota: 1954. 1939 | 101 64 | 4 5. | 4 70 | 10 | 119 26 | 281 21 | 34 534 | 11 472 | 4 51 |
| South Atlantic: West Virginia: 1954. 1939. | 9,276 14,017 | 503 209 | 14,198 12,120 | 420 1,043 | 2,671 3,535 | 7,858 5,771 | 170,260 154,990 | 163,250 136,782 | 45,835 17,199 |
| Maryland, Virginia, Georgia, and Florida: 1954 ⁴ | 22 | 4 | 64 | 57 | 554 | 1,081 | 2,830 | 2,782 | 793 |
| East South Central: Kentucky: 1954. 1939. | 13,290 7,793 | 506 75 | 4,055 2,075 | 221 382 | 12,295 4,211 | 36,161 4,361 | 73,066 40,628 | 68,567 35,123 | 18,731 4,967 |
| Mississippi: 1954 | 1,645 | 132 | 219 | 58 | 33,130 | 82,427 | 200,660 | 135,802 14,377 | 12,439 |
| Tennessee and Alabama: 1954 | 125 38 | 4 2 | 21 3 | ::: | 1,598 44 | 3,172 44 | 190 | 94 | 33 1 |

See footnotes at end of table.

| | BI GEOGRAPI | TIC DIVISIO | ONS AND SIA | 1954 | AND 1939UC | ntinued | | | | |
|-----------------------------------------------------------|-------------------|----------------------|-------------------|----------------------|--------------------------------|----------------------------------------------|------------------------------|------------------------------|------------------------|--|
| | Number | of wells | in December | r 1954 | Crude petr field co ship | coleum and ondensate oped ¹ | Natural gas | | | |
| Geographic division, State, and year | Oil we | ells ² | Gas w | ells ² | | Value at | | Shipped | | |
| | Producing | Shut-in ³ | Producing | Shut-in ³ | Quantity | wells | Produced | Quantity | Value at wells | |
| | | | | | (1,000 barrels) | (\$1,000) | (1,000,000 cubic feet) | (1,000,000 cubic feet) | (\$1,000) | |
| West South Central: Arkansas: | | | | | | | | | | |
| 1954 1939 | 3,438 2,809 | 212 139 | 226 178 | 52 14 | 26,731 20,915 | 71,393 16,452 | 49,554 19,464 | 28,230 11,323 | 2,162 548 | |
| Louisiana: 1954. 1939. | 13,701 5,046 | 1,251 428 | 3,771 1,483 | 783 109 | 241,658 92,155 | 708,697 95,599 | 1,560,566 378,366 | 1,319,130 305,211 | 140,629 10,663 | |
| Oklahoma: 1954 1939 | 55,491 48,314 | 3,624 2,592 | 3,393 2,070 | 497 298 | 171,168 153,161 | 472,390 158,549 | 784,263 294,124 | 583,632 214,974 | 53,356 5,176 | |
| Texas: 1954. 1939. | 135,919 86,721 | 5,610 1,258 | 10,090 2,847 | 1,998 362 | 930,474 467,766 | 2,644,650 467,690 | 5,151,640 1,183,831 | 4,179,153 902,435 | 364,068 21,234 | |
| ountain: Montana: 1954 | 3,364 1,637 | 262 156 | 1,098 430 | 145 35 | 13,789 5,844 | 30,497 5,679 | 30,262 26,686 | 26,687 24,322 | 1,905 1,131 | |
| Wyoming: 1954. 1939. | 5,716 2,562 | 978 765 | 162 111 | 88 101 | 91,337 22,270 | 217,445 19,677 | 110,290 40,245 | 69,461 38,146 | 7,562 1,151 | |
| Colorado: 1954 1939 | 1,634 201 | 80 56 | 129 22 | 83 8 | 44,679 1,378 | 123,897 1,303 | 66,593 2,613 | 42,045 2,222 | 4,158 89 | |
| New Mexico: 1954 | 7,359 2,876 | 258 130 | 1,806 105 | 205 19 | 74,279 37,577 | 203,596 30,565 | 455,151 105,863 | 428,426 83,356 | 32,384 1,434 | |
| Utah, Arizona, and Nevada: 1954 1939 ⁴ . | 75 1 | 24 | 25 6 | 9 | 1,948 20 | 4,450 17 | 16,694 ⁵ 5,742 | 15,886 ⁵ 5,694 | 2,260 31 9 7 | |
| Pacific: California: 1954 | 32,047 16,538 | 5,091 3,609 | <i>575</i> 119 | 142 56 | 357,342 224,107 | 930,825 230,352 | 761,882 393,820 | 434,017 276,333 | 152,039 18,852 | |
| Washington and Oregon: 1954 | ::: | ::: | 12 | 1 1 | ::: | | (⁵) | (⁵) | ; 5 ; | |

Includes shipments of drips from oil— and gas-field operations. Excludes drips from transmission lines and liquids recovered from gas at natural gasoline and cycle condensate plants. For 1939, all figures represent production.

For wells that produced both oil and gas, respondents were requested to classify them according to the more valuable total product. They were requested to classify "distillate" wells as oil wells if the value of all liquids produced was greater than the value of gas produced; but otherwise to classify them as gas wells.

For 1954, the figures for "shut-in" wells represent only data reported on "long forms." About 2,000 "short forms" were used to collect data from small establishments. Such forms did not provide for data on the number of "shut-in" wells. Reports obtained on short forms accounted for less than 3 percent of the total value of oil and gas shipped in 1954.

For 1939, no producing oil— or gas-field operations were reported in North Dakota, Nebraska, Maryland, Virginia, Georgia, Florida, Alabama, Arizona, Nevada, and Oregon.

Frigures for Washington are included with those for Utah.

(Represents holes drilled and completed during 1954 by all operators of oil- and gas-field properties covered in the census whether they are

| | | United Stat | es, total | Middle A | tlantic |
|----------|-----------------------------------------------------------------------------------------|--------------------|------------------------|----------------|----------------|
| Line | Item | | | | |
| no. | ▼ 0em | 1954 ¹ | 1939 | New York | Pennsylvania |
| 1 | Number of wells drilled, total | 52,210 | 22,560 | 413 | 1,038 |
| 2 | Oil wells ² | 28,822 | 17,263 | 206 | 314 |
| 3 | Gas Wells ² | 3,886 16,357 | 1,594 3,703 | 5 15 | 277 197 |
| 5 | Dry holes ³ Service wells ³ | 3,145 | (NA) | 187 | 250 |
| 6 | Footage drilled, total | 207,841 | 72,191 | 574 | 2,995 |
| 7 8 | Oil wellsdodododododod | 115,223 | 55,837 | 281 | 444 |
| 9 | Dry holesdodo | 18,509 69,944 | 4,439 11,915 | 9 35 | 1,265 739 |
| 10 | Service wellsdodo | 4,165 | (NA) | 249 | 547 |
| 11 | Average footage drilled per well, all wells | 3,981 | 3,200 | 1,390 | 2,885 |
| 12 13 | Oil wells. Gas wells. | 3,998 4,763 | 3,235 2,785 | 1,364 1,800 | 1,414 4,567 |
| 14 | Dry holes | 4,276 | 3,218 | 2,333 | 3,751 |
| 15 | Service wells | 1,324 | (NA) | 1,332 | 2,188 |
| 16 | Cost of drilling and equipping wells, total ⁵ \$1,000 | 2,331,048 | 404,904 | 1,801 | 20,678 |
| 17 18 | Per welldo Per foot\$1 | 44.6 11.22 | 17.9 5.61 | 4.4 3.14 | 19.9 6.90 |
| 19 | Oil wells\$1,000 | 1,462,860 | 330,546 | 882 | 1,356 |
| 20 21 | Per welldo Per foot\$1 | 50.8 12.70 | 19.1 5.92 | 4.3 3.14 | 4.3 3.05 |
| 22 | Gas wells\$1,000 | 268,903 | 20,926 | 52 | 10,668 |
| 23 24 | Per welldo\$1\$1 | 69.2 14.53 | 13.1 4.71 | 10.4 5.78 | 38.5 8.43 |
| 25 | Dry holes\$1,000 | 571,314 | 53,432 | 169 | 5,112 |
| 26 27 | Per welldo | 34.9 8.17 | 14.4 4.48 | 11.3 4.83 | 25.9 6.92 |
| 28 | Service wells\$1,000 | 27,971 | (NA) | 698 | 3,542 |
| 29 | Per welldo | 8.9 | (NA) | 3.7 | 14.2 |
| 30 | Per foot | 6,72 | (NA) | 2.80 | 6.48 |
| 31 32 | Cost, excluding amount paid contractors, total\$1,000 Oil wells | 1,313,273 | 256,923 | 980 559 | 9,506 852 |
| 33 | Gas wellsdodo | 884,114 163,125 | 12,366 | 17 | 5,191 |
| 34 35 | Dry holesdodododo | 251,157 | 30,750 (NA) | 54 350 | 1,542 1,921 |
| | | 14,877 | | | |
| 36 | Cost of drilling, total ⁶ dodo | 706,158 | 131,718 | 314 | 4,922 |
| 37 38 | Oil wellsdodododo | 390,137 93,147 | 98,228 6,344 | 140 8 | 395 2,449 |
| 39 40 | Dry holesdodoservice wellsdo | 216,139 6,735 | 27,146 (NA) | 52 114 | 1,318 |
| 41 | Cost of casing, total ⁷ do | 347,706 | 75,317 | 160 | 3,302 |
| 42 | Oil wellsdo | 264,171 | 67,730 | 85 | 156 |
| 43 44 | Gas wellsdododododododododododododododo | 47,221 | 4,347 3,240 | 7 2 | 2,182 180 |
| 45 | Service wellsdo | 31,532 4,782 | (NA) | 66 | 784 |
| 46 | Cost of equipment for flowing and pumping and production derrick, total ⁶ do | 259,409 | 49,888 | 506 | 1,282 |
| 47 | Oil wellsdodo | 229,806 | 47,849 | 334 | 301 |
| 48 49 | Gas wellsdodododo | 22,757 3,486 | 1,675 364 | 2 | 560 44 |
| 50 | Service wellsdo | 3,360 | (NA) | 170 | 377 |
| 51 | Amount paid or due contractors for drilling or equipping wells, totaldodo | 1,017,775 | 147,981 | 821 | 11,172 |
| 52 | Oil wellsdo | 578,746 | 116,740 | 323 | 504 |
| 53 54 | Gas wellsdodododo | 105,778 320,157 | 8,560 22,681 | 35 115 | 5,477 3,570 |
| 55 | Service Wellsdodo. | 13,094 | (NA) | 348 | 1,621 |

See footnotes at end of table.

WELLS IN THE UNITED STATES: 1954 AND 1939; AND FOR GEOGRAPHIC DIVISIONS AND STATES: 1954

classified in the crude petroleum or natural gas industry or in the contract service industriea.)

| East North Central | | Weat North Central | | | South Atlantic | | | | | |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-----------------|-------------------------|------------------------------------|-------------------------------------------|-----------------------------------------------------|---------------------------------------------------|------------------------------|
| Ohio | Indiana | Illinois | Michigan | North Dakota | Nebraska | Kansas | Iowa, Missouri, and South Dakota | West Virginia | Maryland, Virginia, Georgia, and Florida | Line no. |
| 985 | 803 | 3,224 | 561 | 301 | 411 | 5,220 | 74 | 707 | 74 | 1 |
| 436 227 274 48 | 296 18 451 38 | 1,741 7 1,051 425 | 218 12 325 6 | 185 116 | 202 19 190 | 2,736 370 1,827 287 | 25 26 23 | 88 458 124 37 | 2 27 45 | 2 3 4 5 |
| 2,218 | 1,461 | 7,531 | 1,721 | 2,168 | 2,183 | 15,143 | 181 | 2,115 | 334 | 6 |
| 1,051 496 627 44 | 594 21 807 39 | 4,296 8 2,742 485 | 770 40 901 10 | 1,543 625 | 1,144 83 956 | 7,722 1,017 6,041 363 | 53 101 27 | ⁴ 216 ⁴ 1,520 433 71 | (4) (4) 209 | 7 8 9 10 |
| 2,252 | 1,819 | 2,336 | 3,068 | 7,203 | 5,311 | 2,900 | 2,446 | 2,991 | 4,514 | 11 |
| 2,415 2,185 2,288 9,167 | 2,007 1,167 1,789 9,743 | 2,468 1,333 2,609 1,141 | 3,532 3,333 2,772 1,656 | 8,341 5,388 | 5,663 4,368 5,032 | 2,822 2,749 3,307 1,265 | 2,120 3,885 1,174 | 42,400 43,134 3,492 1,919 | (4) (4) 4,644 ••• | 12 13 14 15 |
| 12,112 | 8,656 | 54,764 | 14,794 | 30,092 | 17,454 | 104,194 | 2,784 | 15,306 | 3,180 | 16 |
| 12.3 5.46 | 10.8 5.92 | 17.0 7.27 | 26.4 8.60 | 100.0 13.88 | 42.5 8.00 | 20.0 6.88 | 37.6 15.38 | 21.6 7.24 | 43.0 9,52 | 17 18 |
| 6,994 | 4,870 | 39,713 | 8,884 | 22,660 | 12,810 | 66,550 | 1,106 | 41,555 | (4) | 19 |
| 16.0 6.65 | 16.5 8.20 | 22.8 9.24 | 40.8 11.54 | 122.5 14.69 | 63.4 11.20 | 24.3 8.62 | 44.2 20.86 | 417.3 47.20 | (4) (4) | 20 21 |
| 2,884 | 202 | 84 | 349 | ••• | 624 | 10,610 | ••• | 411,762 | (4) | 22 |
| 12.7 5.81 | 11.2 9.62 | 12.0 10.50 | 29.1 8.73 | | 32.8 7.52 | 28.7 10.43 | | ⁴ 24.3 ⁴ 7.74 | (4) (4) | 23 24 |
| 1,974 | 3,316 | 11,514 | 5,485 | 7,432 | 4,020 | 24,871 | 1,199 | 3,194 | 1,562 | 25 |
| 7.2 3.15 | 7.4 4.11 | 11.0 4.20 | 16.9 6.09 | 64.1 11.89 | 21.2 4.20 | 13.6 4.12 | 46.1 11.87 | 25.8 7.38 | 34.7 7.47 | 26 2 7 |
| 260 | 268 | 3,453 | 76 | | ••• | 2,163 | 479 | 413 | ••• | 28 |
| 5.4 5.91 | 7.1 6.87 | 8.1 7.12 | 12.7 7.60 | ::: | | 7.5 5.96 | 20.8 17.70 | 11.2 5.82 | ::: | 29 3 0 |
| 6,074 | 4,416 | 30,716 | 8,458 | 18,506 | 10,646 | 62,637 | 682 | 8,534 | 1,019 | 31 |
| 3,948 1,451 537 138 | 3,091 116 1,135 74 | 24,583 41 4,069 2,023 | 5,514 324 2,573 47 | 14,162 4,344 | 9,119 421 1,106 | 44,172 5,437 11,720 1,308 | 464 185 33 | 4942 46,296 1,688 302 | (4) (4) 325 | 32 33 34 35 |
| 1,590 | 2,240 | 12,243 | 5,203 | 10,970 | 3,216 | 26,210 | 257 | 4,252 | 484 | 36 |
| 692 400 472 26 | 1,077 72 1,085 6 | 7,418 12 3,741 1,072 | 2,678 242 2,266 17 | 7,089 3,881 | 1,996 218 1,002 | 12,513 2,786 10,432 479 | 82 175 | 4415 42,784 1,118 186 | (4) (4) 233 | 37 38 39 40 |
| 2,571 | 884 | 7,597 | 1,743 | 4,311 | 2,199 | 14,422 | 112 | 3,708 | 459 | 41 |
| 1,768 693 65 45 | 755 28 47 54 | 6,702 12 257 626 | 1,410 63 254 16 | 3,867 444 | 1,977 134 88 | 10,979 1,935 1,147 361 | 92 8 12 | 4351 43,079 567 81 | (4) (4) 89 | 42 43 44 45 |
| 1,913 | 1,292 | 10,876 | 1,512 | 3,225 | 5,231 | 22,005 | 313 | 574 | 76 | 46 |
| 1,488 358 67 | 1,259 16 3 14 | 10,463 17 71 325 | 1,426 19 53 14 | 3,206 19 | 5,146 69 16 | 20,680 716 141 468 | 290 2 21 | 4176 4433 3 35 | (4) (4) 3 | 47 48 49 50 |
| 6,038 | 4,240 | 24,048 | 6,336 | 11,586 | 6,808 | 41,557 | 2,102 | 6,772 | 2,161 | 51 |
| 3,046 1,433 1,437 122 | 1,779 86 2,181 194 | 15,130 43 7,445 1,430 | 3,370 25 2,912 29 | 8,498 3,088 | 3,691 203 2,914 | 22,378 5,173 13,151 855 | 642 1,014 446 | 4613 45,466 1,506 | (4) (4) 1,237 | 52 53 54 5 5 |

| | | F | East South Central | | | | |
|-------------|-----------------------------------------------------------------------------------------|----------------|---------------------|--------------------------|--|--|--|
| Line no. | Item | Kentucky | Mississippi 1 | Tennessee and Alabama | | | |
| 1 | Number of wells drilled, total | 1,622 | 401 | 42 | | | |
| 2 | Oil wells2 | 718 | 147 | 2 | | | |
| 3 | Gas wells ² | 172 | 28 | 1 | | | |
| 5 | Dry holes ³ | 407 325 | 223 3 | 39 | | | |
| | | 5.5 | | ••• | | | |
| 6 | Footage drilled, total | 2,689 | 2,713 | 184 | | | |
| 7 | Qil wellsdo | 992 | 91,144 | (9) | | | |
| 8 | Gra wells | 640 725 | 963 91,681 | (°) (°) | | | |
| 10 | Service wellsdodo | 332 | 9 | (*) | | | |
| | | - | | ••• | | | |
| 11 | Average footage drilled per well, all wells | 1,658 | 6,766 | 4,381 | | | |
| 12 | Oil wells | 1,382 | ⁹ 7,677 | (9) | | | |
| 13 14 | Gas wells | 3,721 | 92,172 96,416 | (°) (°) | | | |
| 15 | Service wells | 1,781 1,022 | 3,000 | (*) | | | |
| | | | | | | | |
| 16 | Cost of drilling and equipping wells, totsl ⁵ \$1,000 | 19,982 | 26,017 | 1,294 | | | |
| 17 | Per welldodo | 12.3 | 64.9 | 30.8 | | | |
| 18 | Per foot\$1 | 7.43 | 9.59 | 7.03 | | | |
| 19 | Oil wells\$1,000 | 8,918 | ⁹ 13,698 | (⁹) | | | |
| 20 | Per welldo | 12.4 | 991.9 | (9) | | | |
| 21 | Per foot\$1 | 8.99 | ⁹ 11.97 | (%) | | | |
| 22 | Gas wells\$1,000 | 6,098 | ⁹ 3,389 | (⁹) | | | |
| 23 | Per welldo | 35.5 | ⁹ 116.9 | (°) | | | |
| 24 | Per foot\$1 | 9.53 | ⁹ 5.38 | (°) | | | |
| 25 | Dry holes\$1,000 | 3,198 | ⁹ 10,074 | (°) | | | |
| 26 | Per welldo | 7.9 | 938.4 | . (⁹) | | | |
| 27 | Per foot\$1 | 4.41 | 95.99 | (9) | | | |
| 28 | Service wells\$1,000 | 1,768 | 150 | ••• | | | |
| 29 | Per welldo | 5.4 | 50.0 | ••• | | | |
| 30 | Per foot\$1 | 5.33 | 16.67 | ••• | | | |
| 31 | Cost, excluding amount paid contractors, total\$1,000 | 11,239 | 13,538 | 677 | | | |
| 32 | Oil wellsdo | 5,459 | ⁹ 7,823 | (9) | | | |
| 33 | Gas wellsdodo | 4,109 | 92,184 | (9) | | | |
| 34 | Dry holesdodo | 885 | 34,091 | (9) | | | |
| 35 | Service wellsdo | 786 | 117 | ••• | | | |
| 36 | Cost of drilling, total6do | 3,452 | 6,473 | 600 | | | |
| 37 | Oil wellsdodo | 1,459 | 92,887 9525 | (⁹) | | | |
| 38 39 | Gas wellsdododododo | 1,085 706 | 9525 93,613 | (9) | | | |
| 40 | Service wellsdo | 202 | 48 | | | | |
| 41 | Cost of casing, total7dodo | 3,315 | 94,399 | (°) | | | |
| 42 | Oil wellsdodo | 1,691 | 92,872 | (9) | | | |
| 42 | Cas wellsdodo | 1,157 | 1,031 | | | | |
| 44 | Dry holesdodo | 131 | 1,031 478 | (⁶) | | | |
| 45 | Service wellsdo | 336 | 18 | ••• | | | |
| 46 | Cost of equipment for flowing and pumping and production derrick, total ⁸ do | 4,472 | 92,743 | (9) | | | |
| ,,,, | | | 92,064 | (9) | | | |
| 47 48 | Oil wellsdo Ges wellsdo | 2,309 1,867 | 628 | (*) | | | |
| 49 | Dry holesdodo | 48 | ••• | ••• | | | |
| 50 | Service wellsdo | 248 | 51 | ••• | | | |
| 51 | Amount psid or due contractors for drilling or equipping wells, totaldo | 8,743 | 12,479 | 617 | | | |
| 52 | Oil wellsdo | 3,459 | 95,875 | (º) | | | |
| 53 54 | Gas wellsdodododododododo | 1,989 | 91,205 95,983 | (9) | | | |
| | Internation do | 2,313 | 75.983 | [7] i | | | |

NA Not available.

1 Includes the number, footage, and costs for offshore wells which are shown separately in Table 5.

2 See Table 3, footnote 2.

^{*}See Table 3, footnote 2.

*Dry holes represent wells drilled and abandoned without commercial production during 1954. Service wells include gss-injection, water-injection, brine-disposal, and underground-storage wells. The distinction between dry holes and service wells was not made uniformly by all operators. Hence, the combined figures for dry holes and service wells in a State are somewhat more significant than the separate figures for each class. Stratographic test holes are not generally included as dry holes or service wells, although it is believed that some such holes have been included.

*Figures for Maryland, Virginia, Georgia, and Florida are included with those for West Virginia.

*Represents only the tangible costs specified; excludes such costs as taxes, interest on investments, overhead costs, etc. Line 16 equals the sum of lines 31 and 51; and corespondingly the detail under line 31 equals the sum of the detail under lines 31 and 51.

WELLS, IN THE UNITED STATES: 1954 AND 1939; AND FOR GEOGRAPHIC DIVISIONS AND STATES: 1954--Continued

| | West Sout | h Central | | | | Mou | ntain | | | Pacific | |
|-----------------------------|-----------------------------------|------------------------------------|---------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------------------|-----------------------------------|--------------------------------------------|----------------------------------|-------------------------------------------------------------|----------------------|
| Arkansas | Louisiana ¹ | Oklahoma | Texas ¹ | Montana | Wyoming | Colorado | New Mexico | Utah | Idaho, Arizona, and Nevada | (California ¹ , Washington, and Oregon) | Line no. |
| 526 | 3,144 | 8,427 | 17,810 | 3 59 | 1,153 | 1,325 | 1,116 | 84 | 19 | 2,371 | 1 |
| 267 | 1,997 | 5,107 | 10,415 | 165 | 807 | 485 | 560 | 13 | 1 | 1,689 | 2 |
| 14 238 7 | 390 748 9 | 358 1,915 1,047 | 980 6,004 411 | 28 163 3 | 17 321 8 | 67 772 1 | 355 197 4 | 5 66 | 1 17 | 50 606 26 | 3 4 5 |
| 2,221 | 19,956 | 25,696 | 82,877 | 1,506 | 6,233 | 7,073 | 6,101 | 378 | 115 | 11,475 | 6 |
| 1,198 70 | 9,782 3,626 | 16,479 1,492 | 48,294 5,877 | 719 54 | 4,447 98 | 2,590 358 | 3,316 1,505 | 10 ₇₂ | (10) (10) | 8,076 240 | 7 8 |
| 937 16 | 6,509 39 | 6,591 | 28,025 681 | 733 | 1,688 | 4,125 | { 1,269 11 | 10394 | (10) | 3,086 73 | 9 |
| 4,222 | 6,347 | 3,049 | 4,653 | 4,195 | 5,406 | 5,338 | 5,467 | 4,500 | 6,053 | 4,840 | 11 |
| 4,487 5,000 | 4,898 9,297 | 3,227 4,168 | 4,637 3,997 | 4,358 1,929 | 5,511 5,765 | 5,340 5,343 | 5,921 4,239 | 105,143 104,500 | (10) (10) | 4,782 4,800 | 12 |
| 3,937 2,286 | 8,702 4,333 | 3,442 1,083 | 4,668 1,656 | 4,416 | 5,131 | 5,336 | { 6,442 2,750 | 104,747 | (10) | 5,092 2,808 | 14 |
| 15,501 | 409,081 | 247,433 | 850,289 | 22,217 | 82,376 | 49,524 | 98,500 | 10,361 | 3,237 | 209,421 | 16 |
| 29.5 6.98 | 130.1 20.50 | 29.4 9.63 | 47.7 10.26 | 61.9 14.75 | 71.4 13.22 | 37.4 7.00 | 88.3 14.51 | 123.3 27.41 | 170.4 28.15 | 88.3 18.25 | 17 18 |
| 8,949 | 219,271 | 178,498 | 557,679 | 12,462 | 56,134 | 24,567 | 53,721 | ¹⁰ 1,811 | (10) | 159,772 | 19 |
| 33.5 7.47 | 109.8 | 35.0 10.83 | 53.5 11.55 | 75.5 17.33 | 69.6 12.62 | 50.7 9.49 | 95.9 16.20 | ¹⁰ 129.4 ¹⁰ 25.15 | (10) (10) | 94.6 19.78 | 20 |
| 656 | 84,513 | 18,253 | 82,209 | 694 | 2,444 | 4,310 | 24,209 | ¹⁰ 1,060 | (10) | 3,833 | 22 |
| 46.9 9.37 | 216.7 23.31 | 51.0 12.23 | 83.9 13.99 | 24.8 12.85 | 143.8 25.93 | 64.3 12.04 | 68.2 16.09 | ¹⁰ 176.7 | (10) (10) | 76.7 15.97 | 23 24 |
| 5,776 | 104,534 | 45,212 | 204,267 | ¹¹ 9,061 | ¹¹ 23,798 | 1120,647 | 20,432 | 1010,727 | (10) | 44,538 | 25 |
| 24.3 | 139.8 | 23,6 | 34.0 | ¹¹ 54.6 ¹¹ 12.36 | ¹¹ 72.3 ¹¹ 14.10 | ¹¹ 26.7 ¹¹ 5.01 | 103.7 | ¹⁰ 129.2 ¹⁰ 27.23 | (10) (10) | 73.5 | 26 |
| 6.16 | 16.05 763 | 6.86 5,470 | 7.29 6,134 | (¹¹) | $\binom{11}{11}$ | (¹¹) | 16.10 | | | 14.43 1,278 | 27 |
| 17.1 | 84.8 | 5.2 | 14.9 | (11) | (¹¹) | (11) | 34.5 | ••• | | 49.2 | 29 |
| 7.50 7,453 | 19.56 260,495 | 4.82 134,939 | 9.00 465,570 | (11) 8,789 | (11) 44,125 | (11) 23,501 | 12.55 50,827 | 5,783 | 1,507 | 17.51 122,656 | 30 |
| 5,267 | 143,686 | 104,444 | 327,278 | 5,542 | 33,981 | 14,165 | 28,351 | ¹⁰ 1,131 | (10) | 99,581 | 32 |
| 393 1,733 60 | 56,229 60,105 475 | 9,789 17,944 2,762 | 50,871 84,061 3,360 | 330 2,917 | 1,250 8,894 | 2,451 6,885 | 13,420 { 9,028 { 28 | 105,262 | (10) (10) | 1,908 20,367 800 | 33 34 35 |
| 3,172 | 167,471 | 66,416 | 242,211 | 5,310 | 23,192 | 10,847 | 28,489 | 5,040 | 1,273 | 70,311 | 36 |
| 1,425 231 | 80,051 35,981 | 44,668 4,765 | 141,643 29,080 | 2,566 219 | 14,370 915 | 3,209 1,328 | 12,678 8,277 | 10 ₆₇ 1 10 ₇₆₇ | (10) (10) | 50,015 1,003 | 37 38 |
| 1,505 | 51,182 257 | 15,596 1,387 | 69,961 1,527 | 2,525 | 7,907 | 6,310 | 7,534 | 4,875 | (10) | 18,816 477 | 39 40 |
| 1,827 | 62,616 | 35,002 | 133,512 | 1,632 | 9,630 | 6,046 | 14,988 | 519 | 115 | 32,637 | 41 |
| 1,514 | 40,476 | 29,099 | 105,231 | 1,208 | 8,576 | 4,774 | 9,893 | 10181 | (10) (10) | 30,514 | 42 |
| 100 196 17 | 13,807 8,235 98 | 3,173 1,903 827 | 14,415 12,721 1,145 | ⁷⁹ 345 | 248 806 | 731 541 | 3,677 1,418 | 1083 | (10) | *587 1,334 202 | 43 44 45 |
| 2,454 | 30,408 | 33,521 | 89,847 | 1,847 | 11,303 | 6,608 | 7,350 | 224 | 119 | 19,708 | 46 |
| 2,328 | 23,159 | 30,677 | 80 ፈበፈ | 1,768 | 11,035 | 6,182 | 5,780 | 10279 1047 | (10) (10) | 19,052 | 47 |
| 62 32 32 | 6,441 688 120 | 1,851 445 548 | 7,376 1,379 688 | 32 47 | 181 | 392 34 | 1,466 104 | { 1027 1017 | (10) | 318 217 121 | 48 49 50 |
| 8,048 | 148,586 | 112,494 | 384,719 | 13,428 | 38,251 | 26,023 | 47,673 | 4,578 | 1,730 | 86,765 | 51 |
| 3,682 263 4,043 60 | 75,585 28,284 44,429 288 | 74,054 8,464 27,268 2,708 | 230,401 31,338 120,206 2,774 | 6,920 364 6,144 | 22,153 1,194 14,904 | 10,402 1,859 13,762 | 25,370 10,789 11,404 110 | 10680 10163 105,465 | (10) (10) (10) | 60,191 1,925 24,171 478 | 52 53 54 55 |

⁶Represents the cost of labor, supplies, water, fuel, and power used in such operations as erecting and dismantling drilling rigs and derricks, drilling holes, running and cementing casing, and hauling materials; and machinery and tool charges or rentals less the value of materials salvaged after use. Excludes the cost of drilling derrick that was left over well for production after well completion.

Tholudes the cost of derivering and installing equipment. Excludes the value of equipment that was salvaged and was used again but

*Includes the cost of delivering and installing equipment. Excludes the value of equipment that was salvaged and was used again but includes the cost of salvaging.

*See footnote 7. Includes tubing, wellhead fittings, gas traps, flow tanks, etc., and drilling derrick retained over well after completion, or special-production derrick.

*Figures for Tennessee and Alabama are included with those for Mississippi.

10Figures for Idaho, Arizona, and Nevada are included with those for Utah.

11Figures for service wells are included with those for dry holes.

(For census purposes, an offshore well is one which is bottomed at, or produces from, a point which liea seaward from the normal or ordinary coast line. The term does not apply to wells drilled to and producing from points underlying inland watera.)

| | | South | Central | |
|-------------------------------------------------------------------------------------------|----------------------------|---------------------|----------------------------------------------|-------------------------|
| Item | United States, total | Texas | Mississippi ^l and Louisiana | Pacific (California) |
| Number of establishments ² | 25 | 7 | 12 | 6 |
| Crude petroleum shipped and used in lease operations31,000 barrels | 28,727 | 516 | 10,954 | 17,257 |
| Natural gas produced, total | 77,759 | (D) | 64,274 | (D) |
| From oil wells | 21,655 56,104 | (D) | 8,170 56,104 | (D) |
| Number of wells drilled, total | 248 | 30 | 154 | 64 |
| Oil wells ⁴ | 184 28 36 | 18 3 9 | 103 25 26 | 63 1 |
| Footage drilled, total | 2,217 | 251 | 1,497 | 469 |
| Oil wells | 1,529 309 379 | (D) 24 (D) | 925 285 287 | (D) (D) |
| Average footage drilled per well, all wella | 8,940 | 8,367 | 9,721 | 7,328 |
| Oil wella. Gas wells. Dry holes. | 8,310 11,036 10,528 | (D) 8,000 (D) | 8,981 11,400 11,038 | (D) (D) |
| Cost of drilling and equipping wells, total ⁶ \$1,000 | 68,385 | 7,787 | 52,898 | 7,700 |
| Per well | 240.8 30.85 | 259.6 31.02 | 343.5 35.34 | 120.3 16.42 |
| Oil wells\$1,000 | 36,598 | (D) | 25,864 | (D) |
| Per welldo do Per foot | 198.9 23.94 | (D) (D) | 251.1 27.96 | (D) |
| Gaa wells\$1,000 | 16,749 | 868 | 15,881 | ••• |
| Per welldo | 598.2 54.20 | 289.3 36.17 | 635.2 55.72 | • • • |
| Dry holes\$1,000 | 15,038 | (D) | 11,153 | (D) |
| Per welldo Per foot\$1 | 417.7 39.68 | (D) (D) | 429.0 38.86 | (D) |
| Cost, excluding amount paid contractors, total | 51,890 | 5,575 | 39,611 | 6,704 |
| 0il wells .do. Gas wells .do. Dny holes .do. | 27,532 13,237 11,121 | (D) 343 (D) | 18,709 12,894 8,008 | (D) (D) |
| Cost of drilling, total ⁷ do | 39,592 | 4,572 | 30,771 | 4,249 |
| 0il wellsdodo | 18,283 11,293 | (D) 251 (D) | 12,573 11,042 | (D) (D) |
| Cost of casing, total ⁸ dodo | 10,016 | 628 | 7,156 6,084 | 1,833 |
| Oil wellsdododododododododododododododododododododododododododododododododododododododo | 6,238 1,430 877 | (D) 69 (D) | 4,001 1,361 722 | (D) |
| Coat of equipment for flowing and pumping and production derrick, total ⁹ dodo | 3,753 | 375 | 2,756 | 622 |
| Oil wellsdodoGas wellsdododododo. | 3,011 514 228 | (D) 23 (D) | 2,135 491 130 | (D) (D) |
| Amount paid or due contractors for drilling or equipping wells, totaldodo | 16,495 | 2,212 | 13,287 | 996 |
| 0il wella | 9,065 3,513 3,917 | (D) 526 (D) | 7,155 2,987 3,145 | (D) (D) |

D Withheld to avoid approximately disclosing figures for individual companies.

10nly one dry hole was drilled in Missisaippi.

2see Table 1, footnote 1.

2crude petroleum used in lease operations amounted to less than one-tenth of one percent of the totala shown.

4see Table 3, footnote 2.

2see Table 4, footnote 3.

4see Table 4, footnote 5.

7see Table 4, footnote 6.

8see Table 4, footnote 7.

7see Table 4, footnote 8.





1954 Census of Mineral Industries

January 1956

Series:

MI-13-2

NATURAL GASOLINE AND CYCLE CONDENSATE

The value of shipments of the natural gasoline and cycle condensate industries in 1954 amounted to \$637 million. Principal expenses of these industries included \$76 million for wages and salaries, \$99 million for supplies and natural gas liquids received for further processing, \$6 million for purchased fuel and purchased electric energy, and \$39 million for contract work. The cost of purchased machinery installed was \$66 million. Employment in these industries averaged nearly 16 thousand for the year. Capital expenditures for new construction, major alterations, and new and used machinery amounted to \$110 million. The total horsepower of equipment available for use by these industries was nearly 3 million. Water intake during the year was 67 billion gallons.

The value of shipments of the natural gasoline industry was \$505 million; and the value of shipments of the cycle condensate industry was \$131 million. Employment in the natural gasoline industry averaged over 13 thousand as compared with over 2 thousand for the cycle condensate industry. The total horsepower of equipment available for use at natural gasoline plants was 2.5 million; and 0.4 million for cycle condensate plants.

The principal products of the natural gasoline and cycle condensate industries in 1954 were natural gasoline, raw-cycle condensate, liquefied petroleum gases, and finished gasoline and distillates produced from the raw condensates. Net shipments of natural gasoline and raw-cycle condensate amounted to 108 million barrels; liquefied petroleum gases, 124 million barrels; and finished gasoline, distillates, and related products 20 million barrels. These net shipments were computed by adding shipments figures for all natural gas liquids produced in these industries and subtracting figures for receipts of such products for further processing.

Although the shipments of natural gasoline and raw-cycle condensate in 1954 represented only approximately a twofold increase since 1939, the year covered by the preceeding Census of Mineral Industries; the 1954 shipments of liquefied petroleum gases represented over a thirteenfold increase since 1939. Employment in the natural gasoline and cycle condensate industries increased by about one-half between 1939 and 1954, while horsepower of power equipment increased nearly fourfold.

Natural gas liquids were produced in 20 States in 1954. However, about three-quarters of the total production came from the West South Central States, including Arkansas, Louisiana, Oklahoma, and Texas. Over one-half of all natural gas liquids were produced in the State of Texas. The second largest producing State was California with about 12 percent of the total, followed by Oklahoma and Louisiana, each with 9 percent. Production of natural gas liquids in New Mexico amounted to 4 percent of the total. Each of the other producing States accounted for less than 3 percent of the total production. In the State of Texas the shipments of natural gasoline and cycle condensate increased nearly threefold between 1939 and 1954, and shipments of natural gas liquids increased twelvefold. For all natural gas liquids combined, shipments increases occurred for all States or groups of States for which separate statistics are published, except Pennsylvania. These increases ranged from twofold in California, in Oklahoma, and in West Virginia to a twenty-fourfold increase in the East North Central group of States.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

Statistics on water use and storage capacity for these industries were collected for the first time in the 1954 census. In this preliminary release, data are shown only for the total water intake. The final release will include detailed statistics on the purposes for which this water was used, the amount recirculated, the amount treated, kind of water, source of water, and amount discharged. The storage capacity figures collected are published in full in this preliminary release. They indicate that storage capacity located at natural gasoline and cycle condensate plants in 1954 amounted to over 7 million barrels for natural gasoline and cycle condensate, over 5 million barrels for underground storage of liquefied petroleum gases, and over 3 million barrels for above ground storage of liquefied petroleum gases.

The natural gasoline industry represents establishments primarily engaged in producing natural gasoline and liquefied petroleum gases from natural gas. The cycle condensate industry represents establishments primarily engaged in producing cycle condensate and derived liquids at establishments recycling natural gas back into the ground. These definitions are in accordance with the Standard Industrial Classification of the Bureau of the Budget (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949).

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Natural Gas Liquids," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) to minimize duplication in canvassing mineral establishments. The census report form used for the natural gasoline and cycle condensate industries also provided the information required by the Bureau of Mines for its annual statistics on natural gas liquids.

Table 1.--PRINCIPAL STATISTICS FOR THE NATURAL GASOLINE AND CYCLE CONDENSATE INDUSTRIES IN THE UNITED STATES: 1954 AND 1939 (Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939, less than \$2,500)

1954 1939 (natural Natural gasoline and Item gasoline and Natural Cycle cycle cycle gasoline condensate condensate condensate industry industry industries) industries Number of establishments..... 520 44 734 564 Natural gas liquids shipped (net)1...........1,000 barrels... 251,857 204,887 ²60,824 46,970 Value of shipments³.....\$1,000... ²96,338 636,675 505,332 131,343 Number of employees, total4..... 15,548 13,390 2,158 10,337 Production and related workers..... 13,447 11,647 1,800 8,332 All other employees..... 2,101 1,743 358 2,005 Man-hours worked by production and related workers...1,000... 27,629 23,923 3,706 16,634 Principal expenses, total⁵.....\$1,000... 219,803 200,543 19,260 37,856 54,504 Wages of production and related workers.....do.... 63,264 8,760 13,212 Salaries of all other employees.....do..... 12,379 10,325 2,054 5,052 Supplies and natural gas liquids received for further processing......do..... 99,336 93,147 6,189 8,653 2,933 3,164 2,900 6,600 33 Purchased electric energy......do..... 135 Contract work.....do..... 38,727 36,638 2,089 3,984 Purchased machinery installed......do..... 65,736 60,876 4,860 (NA) Capital expenditures (construction, machinery, and equipment)..... 110,469 102,695 13,030 7,774 For machinery and equipment only......do.... 54,161 49,032 5,129 11,569 2,947 2,530 417 772 66,900 52,451 14,449 (NA) Bulk storage capacity9 7,411 5,598 1,813 (NA) Liquefied petroleum gases 5,331 (D) (D) (NA Underground storage......do......do......

NANot available.

3.359

2,631

²Represents production.

⁵Excludes the cost of gas processed.

9Includes only storage capacity located at natural gasoline and cycle condensate plants.

(NA)

DWithheld to avoid approximately disclosing figures for individual companies.

¹Net shipments figures represent gross shipments less figures for natural gas liquids received for further processing.

Represents the value of natural gas liquids, sulfur and sulfur bearing materials, other secondary products, and services performed for others: excludes the value of residue gas sold.

performed for others; excludes the value of residue gas sold.

'For 1954, represents an average of 4 quarterly figures for the payroll periods ending nearest the 15th of March, May, August, and November. For 1939, represents an average of 12 monthly figures for the payroll period ending nearest the 15th of each month.

⁶For 1954, excludes the value of residue gas used for fuel at the processing establishment. For 1939, includes the value of such gas.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy. Represents total water intake from publicly and privately owned systems; including both fresh and brackish water.

| Line no. | Item | United States, total | Middle Atlantic (Pennsyl- vania) | East North Central (Ohio, Illinois, and Michigan) | West North Central (North Dakota, Nebraska, and Kansas) |
|----------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------|---------------------------------------------------|---------------------------------------------------------|
| 1 | Number of establishments | 564 | 10 | 13 | 16 |
| 2 | Natural gas liquids shipped (net)11,000 barrels | 251,857 | 138 | 7,317 | 4,919 |
| 3 | Value of shipments ² \$1,000 | 636,67 5 | 405 | 13,181 | 8 ,75 7 |
| 4 | Number of employees, total ³ | 15,548 | 37 | 295 | 388 |
| 5 6 | Production and related workers | 13,447 2,101 | 37 ••• | 260 35 | 329 59 |
| 7 | Man-hours worked by production and related workers1,000 | 27,629 | 61 | 524 | 650 |
| 8 | Principal expenses, total ⁴ \$1,000 | 219,803 | (D) | (D) | (D) |
| 9 10 11 | Wages of production and related workersdo Salaries of all other employeesdo Supplies and natural gas liquids received for | 63,264 12,379 | 106 | 1,192 172 | 1,514 349 |
| 12 13 14 | further processing ⁵ | 99,336 2,933 3,164 38,727 | 81 (D) (D) (D) | 941 19 (D) (D) | 784 106 85 (D) |
| 15 | Purchased machinery installeddo | 65,736 | (D) | (D) | (D) |
| 16 | Capital expenditures (construction, machinery, and equipment)do | 110,469 | (D) | (D) | 8,141 |
| 17 | For machinery and equipment onlydo | 54,161 | (D) | (D) | 5,190 |
| 18 | Horsepower rating of power equipment ⁶ 1,000 | 2,947 | 3 | 40 | 77 : |
| 19 | Water intake ⁷ 1,000,000 gallons | 66,900 | 491 | 381 | 507 |
| 20 20 | Bulk storage capacity ⁸ Gasoline and cycle condensate | 7,411 | 50 | 48 | 127 |
| 21 22 | Liquefied petroleum gases Underground storagedodododo | 5,331 3,359 | (D) | (D) 94 | (D) · |

DWithheld to avoid approximately disclosing figures of individual companies.

Table 3 .-- QUANTITY AND VALUE OF NET SHIPMENTS OF NATURAL GAS LIQUIDS AND QUANTITY OF NATURAL GAS PROCESSED

(Net shipments figures represent gross shipments less figures East North West North Middle United Central Central Atlantic Line (North Dakota, Item States. (Ohio, (Pennsylno. Nebraska, Illinois. total vania) and Michigan)1 and Kansas)2 NATURAL GAS LIQUIDS NET SHIPMENTS, TOTAL 4,919 1,592 251,857 138 7,317 310 ٦ 60,818 2 307 Value, 1954.....\$1,000... 574,527 405 13,181 8,726 3 Natural gasoline and raw-cycle condensate 4 107,715 (D) (D) 2,576 50,995 325,797 5 296 276 1,456 Value, 1954.....\$1,000... (D) 6 (D) 5,478 Liquefied petroleum gases 7 123,653 (D) (D) 2,343 8 9,170 114 Value, 1954.....\$1,000... 176,283 (D) (D) 3,248 Finished gasoline, kerosine, distillate oils, and residual oils 20,489 (D) 10 22 11 653 5 (D) 72,447 12 Value, 1954.....\$1,000... NATURAL GAS PROCESSED 1954......1,000,000,000 cubic feet... 401 7,614 20 159 13 2,200 27 35 143 14 1939.....do.....do....

¹See table 1, footnote 1.

²See table 1, footnote 3.

³See table 1, footnote 4. ⁴See table 1, footnote 5.

Dwithheld to avoid approximately disclosing figures for individual companies.

For 1939, figures for New York and Michigan are included with figures for Montana and Colorado. There were no natural questione or cycle condensate establishments in New York in 1954, or in Utah in 1939.

²There were no natural gasoline or cycle condensate establishments in North Dakota, Nebraska, or Mississippi in 1939. ³Represents production.

[&]quot;Finished gasoline, kerosine, distillate oils, and residual oils" are included with "Natural gasoline and raw-cycle condensate," amounting to between 2 and 4 percent of the combined totals.

| | South | East South Central | | West Sout | h Central | | | Mountain | | | |
|---|------------------------------|----------------------------------|------------|--------------|----------------|-----------------|--------------|-------------------|-----------------------------------|-------------------------|----------|
| | tlantic (West irginia) | (Kentucky and Mississippi) | Arkensas | Louisiana | Oklahoma | Texas | Wyoming | New Mexico | Montana, Colorado, and Utah | Pac_fic (California) | Line |
| | 41 | 9 | 9 | 53 | 74 | 232 | 10 | 18 | 8 | 71 | 1 |
| 1 | 4,421 | 6,238 | 2,500 | 22,258 | 22,339 | 136,450 | 2,219 | 10,719 | 1,048 | 31,291 | 2 |
| | 7,302 | 9,174 | 5,811 | 61,615 | 42,505 | 346,350 | 5,667 | 19,386 | 2,596 | 113,926 | 3 |
| | 348 | 219 | 258 | 1,190 | 1,882 | 7,844 | 297 | 627 | 91 | 2,072 | 4 |
| | 321 27 | 206 13 | 210 48 | 1,011 179 | 1,663 219 | 6,730 1,114 | 255 42 | <i>55</i> 7 70 | 77 14 | 1,791 281 | 5 |
| | 624 | 414 | 448 | 2,092 | 3,414 | 14,053 | 493 | 1,156 | 154 | 3,546 | 7 |
| | 2,651 | 2,217 | 1,949 | 20,375 | 19,747 | 123,848 | 3,879 | 15,247 | 672 | 20,523 | 8 |
| | 1,229 139 | 932 82 | 977 273 | 4,897 950 | 7,498 1,225 | 31,697 6,470 | 1,215 268 | 2,663 361 | 374 86 | 8,970 2,004 | 9 10 |
| h | 1,004 279 | 758 26 | 561 57 | 7,009 188 | 6,805 78 | 69,957 2,094 | 773 | 4,228 } 81 | 188 | 6,247 | 11 12 |
| 1 | ••• | 419 | l 81 50 | 155 7,176 | 196 3,945 | 1,708 11,922 | 1,534 | l 57 7,857 | } 24 | 578 2,640 | 13 14 |
| | 372 | 575 | 213 | 7,131 | 6,473 | 33,887 | 197 | 6,499 | 2,901 | 2,226 | 15 |
| | 451 | 1,835 | 247 | 16,044 | 10,434 | 49,721 | 1,778 | 13,300 | 3,455 | 4,784 | 16 |
| | 432 | 540 | 175 | 5,294 | 5,963 | 26,374 | 207 | 6,493 | 1,135 | 2,323 | 17 |
| | 27 | 47 | 40 | 174 | 395 | 1,562 | 43 | 141 | 27 | 371 | 18 |
| | 5,866 | 1,485 | 888 | 26,423 | 2,855 | 23,497 | 235 | 1,426 | 390 | 2,456 | 19 |
| | 161 | 35 | 28 | 1,167 | 848 | 4,522 | 38 | 129 | 33 | 225 | 20 |
| | 39 | (D) | 34 | (D) 306 | (D) 291 | 4,289 2,213 | 22 | 429 114 | (D) 21 | (D) 126 | 21 22 |

See table 1, footnote 6. See table 1, footnote 7. See table 1, footnote 8. See table 1, footnote 9.

IN THE NATURAL GASOLINE AND CYCLE CONDENSATE INDUSTRIES, FOR GEOGRAPHIC DIVISIONS AND STATES: 1954 AND 1939

for ratural gas liquids received for further processing

| for natural gas liquids received for further processing.) | | | | | | | | | | | | |
|-----------------------------------------------------------|-----------------------------------------------|-------------------------------------------------|-------------------------------------|------------------------------|------------------------------|-----------------------|----------------------------------------------------|------------------------------------------------|------------------------------|----------------|--|--|
| South | East South Central | | West Sout | th Central | | | Mountain | | | | | |
| Atlantic (West Virginia) | (Kentucky and Mississippi) ² | Arkansas | Louisiana | Oklahoma | Texas | Wyoming | New Mexico | Montana, Colorado, and Utah ¹ | Pacific (California) | Line no. | | |
| 4,421 1,882 7,302 | 6,238 570 9,174 | 2,500 591 5,697 | 2,353 | 22,339 11,539 39,014 | 136,450 24,228 293,004 | 2,219 731 (D) | 10,719 1,385 (D) | 1,048 158 2,596 | ,31,291 15,172 111,375 | 2 | | |
| 41,018 1,110 42,732 | 1,376 183 3,572 | ⁵ 1,200 591 ⁵ 3,215 | 2,224 | 611,587 10,193 625,625 | 52,305 18,114 154,864 | 1,115 731 3,116 | ⁵ 5,489 1,295 ⁵ 11,701 | 520 131 1,440 | 21,961 14,395 89,288 | 5 | | |
| 3,403 768 4,570 | 4,862 387 5,602 | 1,300 2,482 | 6,954 (⁷) 11,547 | 10,752 1,159 13,389 | 71,283 5,809 93,737 | 1,104 (D) | 5 , 230 89 (D) | 528 27 1,156 | 9,330 777 22,087 | 8 | | |
| (4) 4 (4) | ••• | (⁵) | 7,483 129 27,446 | (6) 187 (6) | 12,862 305 44,403 | ••• | (⁵) 1 (⁵) | ••• | ••• | 10 11 12 | | |
| 137 136 | 506 37 | 65 19 | 725 121 | 540- 233 | 3,946 956 | 60 1 8 | 440 89 | 43° 9 | 572 377 | | | |

^{5%}Finished gasoline, kerosine, distillate oils, and residual oils" are included with "Natural gasoline and raw-cycle condensate," amounting to less than one percent of the combined total.

6%Finished gasoline, kerosine, distillate oils, and residual oils" are included with "Natural gasoline and raw-cycle condensate," amounting to between 1 and 2 percent of the combined totals.

7Less than 500 barrels.

DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS WASHINGTON, D. C.

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, \$300.

1954 Census of Mineral Industries

February 1956

Series:

MI-13-3

OIL AND GAS FIELD CONTRACT SERVICES

Receipts for services by the oil and gas field contract services industries in 1954 amounted to \$1.6 billion. Establishments primarily engaged in drilling oil and gas wells accounted for \$920 million of these total receipts; establishments primarily engaged in building, repairing, or dismantling rigs and derricks, for \$11 million; and establishments primarily performing other oil and gas field services, for \$634 million.

The principal expenses of these industries included \$541 million for wages and salaries, \$375 million for supplies, \$59 million for fuel and electric energy, \$56 million for subcontract work, and \$37 million for products purchased for resale without further processing. The cost of purchased machinery installed during the year for use by these contractors was \$168 million. Employment in these industries averaged 124 thousand for the year. Capital expenditures for new construction and new and used machinery amounted to \$177 million. The total horsepower of equipment available for use in these industries was 7,991 thousand. Water intake for use during the year, excluding water furnished without charge by companies for which the work was done, was about 7 billion gallons.

The total receipts for the oil and gas field contract services industries in 1954 represents over an eightfold increase since 1939, the year covered by the preceding Census of Mineral Industries. Receipts by establishments primarily engaged in drilling oil and gas wells increased over sevenfold during the same period. Employment in the oil and gas field contract services industries increased threefold, and horsepower of power equipment available for use increased nearly ninefold.

Three oil and gas field contract services industries are recognized in the Standard Industrial Classification of the Bureau of the Budget (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949). The first of these industries represents establishments primarily engaged in drilling wells for oil or gas. This industry includes contractors that specialize in "spudding in" or "drilling in." The second industry represents establishments primarily engaged in building, repairing, and dismantling rigs and derricks. The third industry is defined as establishments primarily engaged in performing miscellaneous oil and gas field contract services, not elsewhere classified, such as oil and gas field exploration; excavating slush pits and cellars; grading, and building foundations at well locations; well surveying; running, cutting, and pulling casings, tubes, and rods; cementing wells; shooting wells; perforating well casing; acidizing and chemically treating wells; cleaning out, bailing, and swabbing wells; and drilling water intake wells. Establishments primarily engaged in hauling oil and gas field supplies and equipment, or in oil and gas field machine-shop work are not included in these industries.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

In the 1954 minerals census contractors were requested to prepare one report for all oil and gas field contract services performed in the United States. These reports were classified on the basis of the principal type of service performed and the principal State in which the service was performed. Over one-half of the contracting companies, accounting for nearly three-fifths of the total receipts in 1954 represented establishments primarily engaged in drilling oil, gas, dry, or service wells. About 2 percent of the companies, accounting for less than one percent of total receipts represented establishments primarily engaged in building, repairing, or dismantling rigs and derricks. About 6 percent of the companies, accounting for 7 percent of the receipts represented establishments primarily engaged in geophysical and other exploration work. Well surveying, well logging, and cementing wells were the primary activities of less than 2 percent of the companies, but accounted for 12 percent of total receipts for services. About 3 percent of total receipts was accounted for by companies primarily engaged in acidizing and other chemical treatment of wells; about 3 percent by companies primarily engaged in cleaning out, bailing out, and swabbing wells; about 3 percent by companies primarily engaged in perforating well casing; and another 3 percent by companies which primarily run, cut, and pull casing, tubes, and rods.

Drilling contractors indicated that they performed work in 34 States, including States in all geographic divisions except New England. Classified on the basis of State of primary activity, drilling contractors are shown for 30 States. However, over one-third of the total receipts represented contractors classified in Texas, and about 87 percent of the receipts by these contractors was for work in Texas. Contractors classified in Louisiana accounted for about 16 percent of total receipts by drilling contractors, those in Oklahoma for about 11 percent of receipts, and those in California for about 8 percent. For each other State oil and gas field drilling contractors accounted for 5 percent or less of the total receipts by such contractors in all States.

During 1954 establishments primarily engaged in oil and gas field contract services drilled about 43,000 wells, including about 26,000 oil wells, 3,000 gas wells, 13,000 dry holes, and 1,000 service wells. The total footage drilled during 1954 for these wells was about 167 million feet. The costs borne by contractors in drilling these wells was \$683 million. These figures exclude wells drilled on contract for others by establishments primarily engaged in producing oil or gas. Figures for contract drilling by such establishments will be included in the final reports for this census. These statistics also exclude figures for wells drilled by companies for their own account. Data for the number, footage, and costs for such wells will be included in the preliminary and final reports on the crude petroleum and natural gas industries.

The statistics in this report are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin "Oil and Gas Field Contract Services," which will be published and offered for sale by the Superintendent of Documents later this year. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years.

(Excludes establishments for 1954 with amount received for services and with expenditures less than \$500; and for 1939, less than \$2,500.)

| Item | All oil a field co | | Drilling gas w | oil and ells | dismantl | ing, ng, and ing rigs rricks | Oil and g contract n.e. | services, |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------|
| | 1954 | 1939 | 1954 | 1939 | 1954 | 1939 | 1954 | 1939 |
| Number of contracting companies | 5,325 | 1,619 | 2,798 | 985 | 113 | 115 | 2,414 | 519 |
| Amount received or due for services, total\$1,000 | 1,565,121 | 187,539 | 920,038 | 128,107 | 11,276 | 9,155 | 633,807 | 50,277 |
| Drilling oil, gas, dry, and service wellsdo Building, repairing, and dismantling rigs and | 890,433 | (NA) | 885,983 | (NA) | | (NA) | 4,450 | (NA) |
| derricksdo Other services classified in these industriesdo All other receipts ¹ do | 12,306 597,907 64,475 | (NA) (NA) (NA) | 123 22,885 11,047 | (NA) (NA) (NA) | 10,348 335 593 | (NA) (NA) (NA) | 1,835 574,687 52,835 | (NA) (NA) (NA) |
| Value added in oil and gas field contract services 2do | 1,046,488 | (NA) | 561,358 | (NA) | 9,233 | (NA) | 475,897 | (NA) |
| Number of employees, total ³ | 124,453 | 39,762 | 68,084 | 24,224 | 1,596 | 3,736 | 54,773 | 11,802 |
| Production and development workers | 110,574 13,879 | 35,159 4,603 | 61,649 6,435 | 22,548 1,676 | 1,502 94 | 3,478 258 | 47,423 7,350 | 9,133 2,669 |
| Man-hours worked by production and development workers | 247,401 | 57,720 | 135,057 | 38,621 | 1,686 | 3,265 | 110,658 | 15,834 |
| Principal expenses, total\$1,000 | 1,068,723 | (NA) | 670,775 | (NA) | 7,259 | (NA) | 390,689 | (NA) |
| Wages of production and development workers do. Salaries of all other employees do. Supplies do. Fuel do. Purchased electric energy do. Subcontract work do. Products purchased for resale do. | 449,288 92,146 374,710 57,978 995 56,243 37,363 | 51,523 13,696 (NA) (NA) (NA) (NA) (NA) | 267,989 43,851 275,740 34,751 183 40,990 7,271 | 36,020 5,917 (NA) (NA) (NA) (NA) (NA) | 4,668 457 1,482 294 4 187 167 | 3,725 568 (NA) (NA) (NA) (NA) (NA) | 176,631 47,838 97,488 22,933 808 15,066 29,925 | 11,778 7,211 (NA) (NA) (NA) (NA) (NA) |
| Purchased machinery installeddo | 168,224 | (NA) | 112,320 | (NA) | 338 | (NA) | 55,566 | (NA) |
| Capital expenditures (construction, machinery, and equipment)do | 176,880 | (NA) | 112,575 | (NA) | 429 | (NA) | 63,876 | (NA) |
| For machinery and equipment onlydo | 172,097 | (NA) | 110,682 | (NA) | 373 | (NA) | 61,042 | (NA) |
| Horsepower rating of power equipment41,000 | 7,991 | 932 | 4,207 | 678 | 39 | 15 | 3,745 | 239 |
| Water intake ⁵ ,000,000 gallons | 6,597 | (NA) | 5,917 | (NA) | 22 | (NA) | 658 | (NA) |

NA Not available.

¹Includes receipts for services not classified in these industries, such as hauling and machine-shop work; receipts for oil, gas, and other products of establishments in these industries producing such items as a secondary activity; and receipts for products purchased and

other products of establishments in these industries producing such items as a secondary activity; and receipts for products purchased and resold without further processing.

Represents total receipts plus capital expenditures less cost of supplies, fuel, purchased electric energy, subcontract work, purchased machinery installed, and products purchased for resale.

For 1954, represents an average of 4 quarterly figures for the payroll periods ending nearest the 15th of March, May, August, and November. For 1939, represents an average of 12 monthly figures for the payroll period ending nearest the 15th of each month.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

Represents the intake of both fresh and brackish water from publicly and privately owned systems. However, excludes water furnished without above by commence for which the contract work was done.

without charge by companies for which the contract work was done.

(Contractors were requested to prepare one report for all oil and gas field services performed in the United States. These reports were

| | (Contractors were requested to prepare one report for | r all oil a | ind gas fie | Id service | es performe | d in the U | nited Stat | es. These | reports were |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------|------------------------------------------------|-----------------------------------------------------|------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------|
| | | | | East | t North Cer | tral | West Nort | h Central | South |
| Line no. | Item | United States, total | Middle Atlantic (New York and Pennsyl- vania) | Ohio and Indiana | Illinois | Michigan | Iowa, North Dakota, South Dakota, and Nebraska | Kansas | Atlantic (Maryland, Virginia, West Virginia, and Florida) |
| 1 | Number of contracting companies | 2,798 | 171 | 166 | 134 | 48 | 23 | 278 | 106 |
| 2 | Amount received or due for services, total\$1,000 Receipts for services in the specified State by contractors classified in that State | 920,038 | 11,710 | 7,571 | 27,414 | 8,043 | 8,059 | 46,930 | 8,079 |
| 4 | as percent of line 2Percent Receipts for services in the specified State by contractors classified in all States as | ••• | 95 | 92 | 89 | 99 | 74 | 88 | 91 |
| | percent of line 21do | ••• | 112 | 117 | 94 | 101 | 270 | 103 | 110 |
| 5 | Drilling oil, gas, dry, and service wells, except "drilling in" and reworking reported separately | 848,752 37,231 | 9,772 568 | 6,980 27 | 22,656 2,171 | 7,803 47 | 6,939 25 | 39,267 3,529 | 7,569 153 |
| 7 | Other receiptsdodo | 34,055 | 1,370 | 564 | 2,587 | 193 | 1,095 | 4,134 | 357 |
| 0 | services ² do | 561,358 | 8,060 | 5,535 | 17,185 | 5,113 | 4,571 | 27,893 | 5,613 |
| 9 | Number of employees, total ³ | 68,084 | 1,155 | 1,037 | 2,275 | 650 | 464 | 3,7 49 | 1,102 |
| 10 11 | Production and development workers | 61,649 6,435 | 1,108 47 | 1,004 33 | 2,163 112 | 585 65 | 408 56 | 3,321 428 | 1,055 47 |
| 12 | Man-hours worked by production and development workers | 135,057 | 2,598 | 1,807 | 4,048 | 1,303 | 962 | 6,913 | 2,444 |
| 13 | Principal expenses, total\$1,000 | 670,775 | 7,879 | 5,222 | 18,790 | 6,320 | 6,213 | 34,623 | 5,943 |
| 14 15 16 17 18 19 20 | Wages of production and development workersdo. Salaries of all other employeesdo. Suppliesdo. Fueldo Purchased electric energydo Subcontract workdo Products purchased for resaledo | 267,989 43,851 275,740 34,751 183 40,990 7,271 | 3,934 228 2,146 360 6 1,204 | 2,972 168 1,571 268 1 187 55 | 8,009 523 7,423 1,271 5 1,397 162 | 2,781 616 2,296 435 1 191 | 2,230 428 2,304 236 469 546 | 13,864 1,713 12,882 2,145 10 2,989 1,020 | 3,315 119 2,129 198 1 126 55 |
| 21 | Purchased machinery installeddo | 112,320 | 826 | 603 | 2,673 | 707 | 499 | 4,262 | 1,320 |
| 22 | Capital expenditures (construction, machinery, and equipment)do | 112,575 | 893 | 649 | 2,702 | 700 | 566 | 4,271 | 1,363 |
| 23 | For machinery and equipment onlydo | 110,682 | 851 | 602 | 2,686 | 698 | 566 | 4,143 | 1,329 |
| 24 | Horsepower rating of power equipment41,000 | 4,207 | 82 | 44 | 105 | 40 | 32 | 198 | 58 |
| 25 | Water intake ⁵ | 5,917 | 24 | 19 | 137 | 51 | 41 | 326 | 12 |

¹Each contractor was asked to report the amount received or due for work performed in each State. Thus, it was possible to determine the total amount received by these contractors for work in each State, even though other State statistics are based on the classification of the establishment according to the State for which the total amount received was greatest. The ratio in this line has been computed to indicate the extent to which contract work in the specified State or States was done by contractors classified in other States.

classified on the basis of the principal type of service performed and the principal State in which the service was performed.)

| East Sout | th Central | | West South | Central | | | Mour | ntain | | | |
|-------------------------------------------|-----------------------------------------|------------------------------------|---------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------|------------------------------------------------|---------------------------------------------------|----------------------------------------------|----------------------------------------------------------|----------------------------------------|
| Kentucky, Tennessee, and Alabama | Mistrssippi | Arkansas | Louisiana | Oklahoma | Texas | Wyoming | Colorado | New Mexico | Montana, Arizona, and Utah | Pacific (California) | Line no. |
| 146 | 19 | 17 | 134 | 413 | 847 | 53 | 40 | 55 | 48 | 100 | 1 |
| 8,702 | 9,832 | 2,792 | 148,203 | 105,134 | 358,121 | 29,463 | 24,472 | 26,615 | 12,278 | 76,620 | 2 |
| 85 | 79 | 86 | 63 | 85 | 87 | 79 | 50 | 62 | 73 | 95 | 3 |
| `L07 | 144 | 168 | 74 | 106 | 99 | 107 | 78 | 137 | 217 | 100 | 4 |
| 8,060 244 398 | 9,026 411 395 | 2,773 19 | 139,966 6,697 1,540 | 98,112 4,089 2,933 | 327,601 16,168 14,352 | 28,323 577 563 | 24,054 20 398 | 25,628 591 396 | 12,019 121 138 | 72,204 1,774 2,642 | 5 6 7 |
| 5,106 | 5,558 | 1,788 | 94,832 | 62,589 | 216,888 | 16,931 | 12,184 | 15,655 | 8,222 | 47,635 | 8 |
| 1,183 | 874 | 254 | 9,253 | 8,508 | 25,564 | 1,727 | 1,919 | 1,910 | 933 | 5,527 | 9 |
| 1,118 65 | 811 63 | 231 23 | 8,179 1,074 | 7,754 754 | 23,148 2,416 | 1,503 224 | 1,784 135 | 1,772 138 | 834 99 | 4,871 656 | 10 |
| 2,007 | 1,479 | 415 | 20,893 | 16,758 | 52,021 | 3,326 | 3,231 | .3 632 | 2,010 | 9,150 | 12 |
| 6,828 | 7, 95 | 1,886 | 101,232 | 78,356 | 262,824 | 20,936 | 19,278 | 19,988 | 8,557 | 57 , 705 | 13 |
| 3,003 218 2,619 439 4 545 | 3,012 335 3,600 458 190 | 808 68 610 139 261 | 40,360 7,533 42,844 5,753 12 4,730 | 31,149 5,096 32,796 3,863 10 5,350 92 | 103,314 17,596 106,588 13,372 93 17,383 4,478 | 7,211 1,335 9,736 1,252 23 1,379 | 6,703 934 10,348 980 858 55 | 7,096 2,041 8,784 369 3 994 201 | 4,027 464 3,230 633 195 8 | 24,201 4,436 23,834 2,080 14 2,542 598 | 14 15 16 17 18 19 20 |
| 545 | 2,048 | 299 | 31,451 | 10,944 | 40,883 | 3,490 | 2,485 | 2,058 | 1,349 | 5,878 | 21 |
| 556 | 2,022 | 305 | 31,419 | 10,510 | 41,564 | 3,348 | 2,438 | 1,949 | 1,359 | 5,961 | 22 |
| 554 | 1,852 | 305 | 31,075 | 10,205 | 40,887 | 3,346 | 2,394 | 1,943 | 1,356 | 5,890 | 23 |
| 65 | 70 | 14 | 597 | 503 | 1,668 | 117 | 62 | 124 | 54 | 374 | 24 |
| 33 | 92 | 19 | 1,174 | 555 | 3,000 | 129 | 78 | 140 | 14 | 73 | 25 |

²See table 1, footnote 2.
³See table 1, footnote 3.
⁴See table 1, footnote 4.
⁵See table 1, footnote 5.

| - | | | | | |
|----------|------------------------------------------------------------------------------------------------|------------------------------|----------------------------|----------------------|------------------------------------------------------------|
| Line no. | Item | All types of services, total | Geophysical exploration | Other exploration | Well surveying, well logging, and cementing wells |
| 1 | Number of contracting companies | 2,414 | 266 | 41 | 122 |
| 2 | Amount received cr due for services, total\$1,900 | 633,807 | 99,694 | 9,880 | 191,842 |
| 3 | Geophysical explorationdo | 87,504 | 87,264 | 239 | (D) |
| 4 5 | Other explorationdodododo | 18,048 68,186 | 9,405 | 8,606 268 | 56,935 |
| 6 | Excavating slush pits and cellarsdodo | 6,123 | | 200 | |
| 7 | Running, cutting, and pulling casing, tubes, and rods2do | 36,538 | | (D) | (D) |
| 8 | Cementing wellsdo Perforating well casingdo | 63,649 38,590 | ••• | ••• | 62,772 6,801 |
| 10 | Acidizing and other chemical treatment of wellsdo | 53,254 | • • • | ••• | 4,084 |
| 11 | Cleaning out, bailing out, and swabbing wellsdo | 49,981 | | (D) | (D) |
| 12 13 | Installing production equipmentdo Erecting, cleaning, repairing, and dismantling lease tarksdo | 12,694 | ••• | ••• | ••• |
| 14 | Other services classified in the industry | 7,598 132,522 | 168 | (D) | (D) |
| 15 | All other receipts ³ dodo | 59,120 | 2,821 | (D) | (D) |
| 16 | Value added in oil and gas field contract services4 | 475,897 | 70,263 | 6,835 | 147,623 |
| 17 | Number of employees, total ⁵ | 54,773 | 10,400 | 764 | 10,467 |
| 18 19 | Production and development workers | 47,423 7,350 | 9,069 1,331 | 452 312 | 7,677 2,790 |
| 20 | | | • | | |
| 20 | Man-hours worked by production and development workers1,000 | 110,658 | 21,752 | 1,183 | 24,017 |
| 21 | Principal expenses, total\$1,000 | 390,689 | 73,748 | 6,598 | 105,599 |
| 22 | Wages of production and development workersdo | 176,631 | 36,543 | 2,109 | 33,984 |
| 23 | Salaries of all other employeesdo | 47,838 | 7,551 | 1,470 | 19,957 |
| 24 25 | Suppliesdo Fueldo | 97,488 22,933 | 18,990 3,027 | 1,964 344 | 20,196 7,498 |
| 26 | Purchased electric energydo | 808 | 106 | . 2 | 292 |
| 27 | Subcontract workdo | 15,066 | 5,755 | 709 | 23,672 |
| 28 | Products purchased for resaledo | 29,925 | 1,776 | , | |
| 29 | Purchased machinery installeddo | 55,566 | 5,957 | 676 | 14,582 |
| 30 | Capital expenditures (construction, machiners, and equipment) | 62 576 | . 100 | 650 | 22,021 |
| | | 63,876 | €,180 | | |
| 31 | For machinery and equipment onlydo | 61,042 | 6,163 | 627 | 21,110 |
| 32 | Horsepower rating of power equipment ⁶ | 3,745 | 883 | 39 | 995 |

Dwithheld to avoid approximately disclosing figures for individual companies.

Represents primarily establishments engaged in general well servicing in shooting wells, and in drilling water wells for oil and gas field use.

2Includes services for plugging and abandoning wells.

ELSEWHERE CLASSIFIED, INDUSTRY IN THE UNITED STATES, BY PRINCIPAL TYPE OF SERVICE: 1954

in the United States. These reports were classified on the basis of the principal type of service performed.)

| | Excavating slush pits and cellars | Running, cutting, and pulling casing, tubes, and rods | Perforating well casing | Acidizing and other chemical treatment | Cleaning out, bailing out, and swabbing wells | Installing production equipment | Lease tank work | Other services 1 | Line no. |
|---|---------------------------------------------|-------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------|
| | 61 | 550 | 15 | 24 | 461 | 129 | 84 | 661 | 1 |
| | 5,787 | 39,830 | 45,893 | 54,194 | 50,586 | 15,091 | 6,568 | 114,442 | 2 |
| } | 4,767 | (D) (D) (D) 30,716 258 (D) 232 5,591 454 (D) | 9,510 (D) (D) 28,400 (D) | (D) (D) (D) (D) 48,785 (D) | (D) (D) (D) 3,991 119 (D) 68 43,032 175 32 | 237 1,132 2 137 10,526 1,462 | (D) (D) (D) (D) (D) (D) (289) 4,746 | 1 (D) 963 1,112 322 (D) (D) 444 1,121 1,160 | 3 4 5 6 7 8 9 10 11 12 13 |
| | 408 | 275 1,986 | 4,450 2,315 | (D) | 2,500 | 487 1,108 | 472 947 | 104,532 4,193 | 14 15 |
| | 4,399 | 31,827 | 35,361 | 36,536 | 40,020 | 12,164 | 5,387 | 85,482 | 16 |
| | 499 | 5,597 | 3,191 | 2,706 | 5,855 | 2,339 | 924 | 12,031 | 17 |
| | 459 40 | 5,361 236 | 2,324 867 | 1,659 1,047 | 5,512 343 | 2,194 145 | 878 46 | 11,838 193 | 18 19 |
| | 1,054 | 10,112 | 6,120 | 4,171 | 11,178 | 4,119 | 1,504 | 25,448 | 20 |
| | 3,212 | 26,088 | 28,453 | 30,016 | 31,915 | 9,935 | 3,913 | 71,212 | 21 |
| | 1,700 174 615 421 2 60 40 | 16,946 1,108 5,201 2,074 68 367 324 | 11,902 5,705 7,837 601 80 2,328 | 7,890 6,115 13,337 1,301 25 1,348 | 17,320 4,037 6,778 2,311 22 1,030 417 | 6,348 736 1,712 601 10 460 68 | 2,546 182 692 347 1 114 31 | 39,343 803 20,166 4,408 200 4,576 1,716 | 22 23 24 25 26 27 28 |
| | 925 | 4,320 | 2,890 | 11,782 | 5,124 | 1,042 | 323 | 7,945 | 29 |
| | 875 | 4,351 | 3,204 | 10,135 | 5,116 | 966 | 327 | 10,051 | 30 |
| | 859 | 4,245 | 2,679 | 9,869 | 5,048 | 912 | 313 | 9,217 | 31 |
| | 52 | 341 | 53 | 333 | 360 | 86 | 43 | 560 | 32 |

³See table 1, footnote 1. ⁴See table 1, footnote 2. ⁵See table 1, footnote 3. ⁶See table 1, footnote 4.

(Represents only wells drilled on contract for others by establishments primarily engaged in performing oil and gas field contract services. classified by State on the basis of the principal State in which the service was performed. For an indication of the extent to which

| clas | sified by State on the basis of the pr | incipal Sta | te in whi | ch the ser | rvice was | performed. | For an | indication | of the ex | tent to which |
|----------------------|--------------------------------------------------------------------------------------|----------------------------------------------|-----------------------------------|--------------------------------------------------------------|----------------------------------|----------------------------------|----------------------------------|------------------------------------------------------------------|------------------------------------|--------------------------------------------------------------------------|
| | | United tot | States, | | .East | North Cer | itral | West Nort | h Central | South |
| Line no. | Item | 1954 | 1939 | Middle Atlantic (New York and Pennsyl- vania) | Ohio and Indiana | Illinois | Michigan | Iowa, North Dakota, South Dakota, and Nebraska | Kansas | Atlantic (Maryland, Virginia, West Virginia, and Florida) |
| 1 | Number of wells drilled, total | 43,227 | 12,322 | 1,018 | 1,316 | 2,555 | 471 | 290 | 4,581 | 527 |
| 2 3 4 5 | Oil wells¹ | 25,768 2,912 13,171 1,376 | 10,024 744 1,554 (NA) | 471 310 112 125 | 598 202 445 71 | 1,657 27 789 82 | 199 10 230 32 | 164 114 12 | 2,773 223 1,510 75 | 53 390 54 30 |
| 6 | Footage drilled, total1,000 feet | 167,488 | 38,898 | 2,338 | 2,259 | 5,354 | 1,244 | 1,748 | 11,900 | 1,467 |
| 7 8 9 10 | Oil wells¹dodo Cas wellsdo Dry holes¹do Service wellsdo | 99 ,7 62 12,357 53,351 2,018 | 31,840 2,135 4,923 (NA) | 655 1,031 460 192 | 1,047 378 722 112 | 3,508 41 1,668 137 | 647 20 476 101 | | 6,374 520 { 4,865 141 | 141 1,013 212 101 |
| 11 | Average footage drilled per well, all wells | 3,875 | 3,157 | 2,297 | 1,717 | 2,095 | 2,641 | 6,028 | 2,598 | 2,784 |
| 12 13 14 15 | Oil wells Cas wells. Dry holes Service wells | 3,872 4,243 4,051 1,467 | 3,176 2,870 3,168 (NA) | 1,391 3,326 4,107 1,536 | 1,751 1,871 1,622 1,577 | 2,117 1,519 2,114 1,671 | 3,251 2,000 2,070 3,156 | 6,811 | 2,299 2,332 3,222 1,880 | 2,660 2,597 3,926 3,367 |
| 16 | Costs borne by contractors in drilling and equipping wells on contract, total\$1,000 | 683,034 | 96,343 | 8,463 | 5,953 | 16,549 | 5,783 | 6,180 | 31,822 | 6,758 |
| 17 18 19 20 | 0il wells¹ | 408,632 52,922 215,512 5,968 | 79,406 4,467 12,470 (NA) | 944 4,680 2,458 381 | 2,670 1,125 1,933 225 | 11,380 112 4,721 336 | 2,835 128 2,154 666 | 4,040 2,140 | 17,535 1,328 { 12,662 297 | 541 4,358 1,269 590 |
| 21 | Cost of drilling borne by contractors except amount paid subcontractorsdo | 658,448 | 93,310 | 7,391 | 5,710 | 15,760 | 5,719 | 5,549 | 28,138 | 6,553 |
| 22 | Cost of well equipment borne by drilling contractorsdo Amount paid subcontractorsdo | 5,865 18,811 | 3,033 (NA) | 271 801 | 155 88 | 275 514 | 25 39 | 443 188 | 951 2,733 | 146 59 |

 $[\]overset{\mbox{\sc D}}{\mbox{\sc Withheld}}$ to avoid approximately disclosing data for individual companies. NANot available.

Contractors were asked to prepare one report for all oil and gas field services performed in the United States. Establishments were contract services reported are representative of the specified State see table 2, lines 3 and 4.)

| East Sou | th Central | | West Sout | h Central | | | Mount | ain | | | |
|-------------------------------------------|--------------------------|-------------------------|----------------------------------|------------------------------------|--------------------------------------|------------------------|-----------------------------|----------------------------|----------------------------------|----------------------------------|----------------------|
| Kentucky, Tennessee, and Alabama | Mississippi | Arkansas | Louisiana | Oklahoma | Texas | Wyoming | Colorado | New Mexico | Montana, Arizona, and Utah | Pacific (California) | Line no. |
| 1,227 | 221 | 238 | 3,575 | 7,177 | 14,954 | 822 | 1,169 | 811 | 283 | 1,992 | 1 |
| 533 194 429 71 | 81 20 120 | 117 100 21 | 2,440 229 868 38 | 4,571 246 1,804 556 | 9,073 728 4,912 241 | 542 5 271 4 | 398 18 753 | 457 246 106 2 | 190 13 79 1 | 1,451 51 475 15 | 2 3 4 5 |
| 1,935 | 1,627 | 810 | 22,783 | 21,464 | 66,702 | 3,602 | 6,172 | 3,802 | 1,182 | 11,099 | 6 |
| 815 531 542 47 | 623 180 824 ••• | 400 370 40 | 14,547 1,562 6,597 77 | 14,014 1,104 5,788 558 | 39,231 4,736 22,271 464 | | 2,042 92 4,038 | 2,311 826 .665 | 812 25 345 | 8,428 264 2,389 18 | 7 8 9 10 |
| 1,577 | 7,362 | 3,403 | 6,373 | 2,991 | 4,460 | 4,382 | 5,280 | 4,688 | 4,177 | 5,572 | 11 |
| 1,529 2,737 1,263 662 | 7,691 9,000 6,367 | 3,419 3,700 1,904 | 5,962 6,821 7,600 2,026 | 3,066 4,488 3,208 1,005 | 4,324 6,505 4,534 1,925 | | 5,131 5,111 5,363 | 5,057 3,358 6,157 | 4,274 1,923 4,313 | 5,808 5,176 5,029 1,200 | 12 13 14 15 |
| 5,740 | 7,543 | 2,232 | 116,969 | 78,463 | 262,508 | 23,062 | 19,606 | 22,345 | 7,807 | 55,251 | 16 |
| 2,422 1,751 1,458 109 | 3,310 959 3,274 | 1,172 972 88 | 74,380 8,447 33,721 421 | 50,740 5,527 20,890 1,306 | 161,913 17,738 81,510 1,347 | 13,352 311 9,399 | 6,068 408 13,130 | 12,700 4,423 } 5,222 | 5,577 90 2,140 | 37,053 1,537 16,546 115 | 17 18 19 20 |
| 5,470 | 7,449 | 2,027 | 112,896 | 76,085 | 254,212 | 22,355 | 19,003 | 21,481 | 7,682 | 54,968 | 21 |
| 115 155 | (D) | (D) (D) | 651 3,422 | 498 1,880 | 1,525 6,771 | (D) | 151 452 | 329 535 | (D) | 36 437 | 22 23 |

These preliminary figures probably somewhat overstate the figures for oil wells and somewhat understate the figures for dry holes. Some contractors indicated that when their work on a well was completed they frequently did not know if the well was a producer. Wherever possible an estimated breakdown was obtained for such wells. However, many reports showing only oil wells did not indicate whether or not this allocation was based on actual records. Some such cases were verified by contact with the respondent, frequently yielding the reply that all wells were actually producers. It has not been feasible to verify all such cases.

DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS WASHINGTON 25, D. C.

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, \$300





1954 Census of Mineral Industries

August 1956 Series: MI-14-1

DIMENSION STONE

The value of shipments of all dimension stone quarries in 1954 amounted to \$78,886 thousand. Of this total, shipments from quarries operated without dressing plants were valued at \$18,928 thousand and shipments from establishments including both a quarry and an associated dressing plant were valued at \$59,958 thousand. Principal expenses for all stone quarries included \$40,227 thousand for wages and salaries, \$13,101 thousand for supplies and minerals received for preparation, \$3,057 thousand for fuel and electric energy, and \$1,207 thousand for contract work. The cost of purchased machinery installed was \$2,664 thousand. Employment at these operations averaged 12,325, including 3,224 for quarries only, and 9,101 for quarries with dressing plants. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$2,856 thousand. The total horsepower of equipment available for use was 264 thousand. Water intake for use during the year, including mine water, was 3,131 million gallons.

Dimension stone quarries were operated in 40 States in 1954. The value of shipments of dimension stone from quarries or associated dressing plants operated at the same location exceeded \$4 million in 1954 for 8 States. Ranked in order of value of shipments, the largest dimension stone producing States were: Indiana, Vermont, Minnesota, Georgia, Tennessee, Pennsylvania, Massachusetts, and Ohio.

The total tonnage of dimension stone shipped in 1954 was about 10 percent below production in 1939, the year covered by the preceding Census of Mineral Industries. Shipments of dressed dimension stone at dressing plants operated in conjunction with quarries increased by 40 percent, while shipments of rough dimension stone declined by 23 percent.

Figures in this release include quarries operated without dressing plants, which are classified in the mineral industries for 1954 according to the Standard Industrial Classification; and also quarries and dressing plants operated at the same location as one establishment, which are classified in the manufacturing industries. The 'Dimension stone' industries as defined in the Standard Industrial Classification represent establishments primarily engaged in mining or quarrying dimension stone. Also included are establishments primarily engaged in producing rough blocks and slabs. Establishments primarily engaged in dressing (shaping, polishing, or otherwise finishing) rough blocks and slabs are classified in the manufacturing industry 'Cut stone and stone products.'' Included in the latter industry, according to the 1954 interpretation of the Standard Industrial Classification, are all establishments which dress dimension stone whether or not these establishments include a quarry. In order to provide complete statistics on stone quarrying operations on a basis more comparable with data for previous years, data for establishments including a quarry which are classified in the manufacturing industries have been segregated and included also in this report of the minerals census, with separate figures shown also for the two types of quarries.

DIMENSION LIMESTONE--The value of shipments of all dimension limestone quarries in 1954 amounted to \$20,493 thousand. Of this total, shipments from quarries operated without dressing plants were valued at \$3,754 thousand and shipments from establishments including both a quarry and an associated dressing plant were valued at \$16,739 thousand. Principal expenses for all dimension limestone quarries included \$10,359 thousand for wages and salaries,



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

\$2,761 thousand for supplies and minerals received for preparation, \$752 thousand for fuel and purchased electric energy, and \$204 thousand for contract work. The cost of purchased machinery installed was \$862 thousand. Employment at these operations averaged 2,850, including 500 for quarries only and 2,350 for quarries with dressing plants. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$772 thousand. The total horsepower of equipment available for use was 72 thousand. Water intake for use during the year, including mine water, was 287 million gallons.

Dimension limestone quarries were operated in 21 States in 1954, but Indiana accounted for two-thirds of the total value of shipments. The next largest producing States were Wisconsin and Minnesota. The total tonnage of dimension limestone shipped in 1954 was about 7 percent below production in 1939, dressed dimension limestone increasing by 121 percent and rough dimension limestone declining by 26 percent.

The "Dimension limestone" industry, as defined in the Standard Industrial Classification, represents establishments primarily engaged in mining or quarrying dimension limestone, including related rocks such as dolomite, travertine, and calcareous tufa.

DIMENSION GRANITE--The value of shipments of all dimension granite quarries in 1954 amounted to \$28,498 thousand. Of this total, shipments from quarries operated without dressing plants were valued at \$5,738 thousand and shipments from establishments including both a quarry and an associated dressing plant were valued at \$22,760 thousand. Principal expenses for all dimension granite quarries included \$13,701 thousand for wages and salaries, \$5,993 thousand for supplies and minerals received for preparation, \$1,260 thousand for fuel and purchased electric energy, and \$352 thousand for contract work. The cost of purchased machinery installed was \$826 thousand. Employment at these operations averaged 4,009, including 967 for quarries only and 3,042 for quarries with dressing plants. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$865 thousand. The total horsepower of equipment available for use was 85 thousand. Water intake for use during the year, including mine water, was 1,764 million gallons.

Dimension granite quarries were operated in 21 States in 1954 with Minnesota, Vermont, and Massachusetts the leading States, each accounting for nearly 20 percent of the total value of shipments. The total tonnage of dimension granite shipped in 1954 was about the same as production in 1939. However, dressed dimension granite increased by 28 percent and rough dimension granite declined by 10 percent.

The "Dimension granite" industry represents establishments primarily engaged in mining or quarrying dimension granite, including related rocks such as gneiss, syenite, diorite, and gabbro.

DIMENSION SLATE--The value of shipments of all dimension slate quarries in 1954 amounted to \$6,904 thousand. All shipments of dimension slate during 1954 were from establishments including both a quarry and an associated dressing plant. Principal expenses for all dimension slate quarries included \$4,025 thousand for wages and salaries, \$927 thousand for supplies and minerals received for preparation, \$290 thousand for fuel and purchased electric energy, and \$18 thousand for contract work. The cost of purchased machinery installed was \$105 thousand. Employment at these operations averaged 1,349. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$133 thousand. The total horsepower of equipment available for use was 24 thousand. Water intake for use during the year, including mine water, was 48 million gallons.

Dimension slate quarries were operated in 6 States in 1954 with Pennsylvania, Vermont, and New York the leading States. The total tonnage of dimension slate shipped in 1954 was about 9 percent below production in 1939.

The "Dimension slate" industry represents establishments primarily engaged in mining or quarrying roofing and other dimension slate.

DIMENSION MARBLE--The value of shipments of all dimension marble quarries in 1954 amounted to \$10,605 thousand. Of this total, shipments from quarries operated without dressing plants were valued at \$3,464 thousand and shipments from establishments including both a quarry and an associated dressing plant were valued at \$7,141 thousand. Principal expenses for all dimension marble quarries included \$5,423 thousand for wages and salaries; \$2,096 thousand for supplies, minerals received for preparation, and contract work; and \$308 thousand for fuel and purchased electric energy. The cost of purchased machinery installed was \$194 thousand. Employment at these operations averaged 1,896, including 637 for quarries only and 1,259 for quarries with dressing plants. Capital expenditures for exploration and

development work, new construction, and new and used machinery amounted to \$207 thousand. The total horsepower of equipment available for use was 30 thousand. Water intake for use during the year, including mine water, was 601 million gallons.

Dimension marble quarries were operated in 10 States in 1954. Tennessee, Missouri, Georgia, and Vermont were the leading States, in combination accounting for 83 percent of the total value of shipments, nearly 30 percent was accounted for by Tennessee alone. The total tonnage of dimension marble shipped in 1954 was about 34 percent below production in 1939, dressed dimension marble decreasing by 27 percent and rough dimension marble declining by 37 percent.

The "Dimension marble" industry represents establishments primarily engaged in mining or quarrying marble, including serpentine (verde antique), dolomitic marble, and onyx marble.

DIMENSION SANDSTONE--The value of shipments of all dimension sandstone quarries in 1954 amounted to \$11,090 thousand. Of this total, shipments from quarries operated without dressing plants were valued at \$5,302 thousand and shipments from establishments including both a quarry and an associated dressing plant were valued at \$5,788 thousand. Principal expenses for all dimension sandstone quarries included \$6,022 thousand for wages and salaries, \$1,370 thousand for supplies and minerals received for preparation, \$377 thousand for fuel and purchased electric energy, and \$445 thousand for contract work. The cost of purchased machinery installed was \$612 thousand. Employment at these operations averaged 1,959, including 973 for quarries only and 986 for quarries with dressing plants. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$774 thousand. The total horsepower of equipment available for use was 43 thousand. Water intake for use during the year, including mine water, was 415 million gallons.

Dimension sandstone quarries were operated in 26 States in 1954 with Ohio, Tennessee, and Pennsylvania the leading States, and Ohio accounting for over 40 percent of the total value of shipments. The total tonnage of dimension sandstone shipped in 1954 was about 31 percent below production in 1939, dressed dimension sandstone increasing by 27 percent and rough dimension sandstone declining by 41 percent.

The "Dimension sandstone" industry represents establishments primarily engaged in mining or quarrying dimension sandstone, including bluestone. Establishments primarily engaged in mining or quarrying and shaping grindstones, pulpstones, millstones, burrstones, and sharpening stones are classified in the "Abrasive stones, natural" industry.

DIMENSION TRAP ROCK AND DIMENSION STONE, NOT ELSEWHERE CLASSIFIED—The value of shipments of all dimension trap rock and miscellaneous dimension stone quarries in 1954 amounted to \$1,296 thousand. Of this total, shipments from quarries operated without dressing plants were valued at \$670 thousand and shipments from establishments including both a quarry and an associated dressing plant were valued at \$626 thousand. Principal expenses for these quarries included \$697 thousand for wages and salaries; \$142 thousand for supplies, minerals received for preparation, and contract work; and \$70 thousand for fuel and purchased electric energy. The cost of purchased machinery installed was \$65 thousand. Employment at these operations averaged 262, including 147 for quarries only and 115 for quarries with dressing plants. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$105 thousand. The total horsepower of equipment available for use was 10 thousand. Water intake for use during the year, including mine water, was 16 million gallons.

The "Dimension trap rock" industry represents establishments primarily engaged in mining or quarrying dimension trap rock (basalt, diabase, and related rocks). The "Dimension stone, not elsewhere classified" industry represents establishments primarily engaged in mining or quarrying dimension stone, not elsewhere classified, such as mica schist, light colored volcanic rocks, argillite, and greenstone (except trap rock and diorite). Dimension soapstone is classified in the "Talc, soapstone, and pyrophyllite" industry.

GENERAL--These statistics are derived from preliminary tabulations of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Dimension Stone," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries. The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about tenyear intervals for a century. Present legislation provides for such a census every five years.

| _ | | | | | | (Exc | cludes es | tablishn | ents for | 1954 Wit | h value | of produ | ction and |
|----------------|-------------------------------------------------------------------------------------------|-------------------------|-------------------|------------------|-------------------------------------------|-------------------|----------------|-----------|-------------------------------------------|-------------------|------------------|-----------------|-------------------------------------------|
| | | Dimensi | on stone | quarrie | s, total | Dimens | sion lime | stone qu | arries | Dimen | sion gra | nite qua | rries |
| Line no. | Item | Total | Quarrie | s only1 | Quarries with | Total | Quarrie | s only1 | Quarries with | m-+-3 | Quarrie | es only1 | Quarries with |
| | | (1954) | 1954 | 1939 | dressing plants ² (1954) | (1954) | 1954 | 1939 | dressing plants ² (1954) | (1954) | 1954 | 1939 | dressing plants ² (1954) |
| 1 | Value of shipments, total3\$1,000 | 78,886 | 18,928 | 6,356 | 59,958 | 20,493 | 3,754 | 1,541 | 16,739 | 28,498 | 5,738 | 3,268 | 22,760 |
| 2 | Value added in quarrying and dressing4do | 61,713 | 15,138 | 5,283 | 46,575 | 16,686 | 2,942 | 1,368 | 13,744 | 20,932 | 4,590 | 2,674 | 16,342 |
| 3 | Number of employees, total ⁵ | 12,325 | 3,224 | 2,890 | 9,101 | 2,850 | 500 | 672 | 2,350 | 4,009 | 967 | 1,238 | 3,042 |
| 4 5 | Production and development workers. All other employees | | 3,068 156 | 2,725 165 | 8,321 780 | 2,693 157 | 472 28 | 617 55 | 2,221 129 | 3,662 347 | 917 50 | 1,163 75 | 2,745 297 |
| 6 | Man-hours worked by production and development workers, total | 23,155 | 5,893 | (NA) | 17,262 | 5,391 | 872 | (NA) | 4,519 | 7,445 | 1,769 | (NA) | 5,676 |
| 7 | At quarriesdo | | 5,847 | (NA) | 6,980 | 2,895 | 826 | (NA) | 2,069 | 4,020 | 1,769 | (NA) | 2,251 |
| | preparation plantsdo | | 46 | (NA) | 10,282 | 2,496 | 46 | (NA) | 2,450 | 3,425 | ••• | (NA) | 3,425 |
| | Principal expenses, total\$1,000 | 57,592 | 12,471 | 4,080 | 45,121 | 14,076 | 2,335 | 894 | 11,741 | 21,306 | 3,806 | 2,073 | 17,500 |
| 10 | Wages of production and development Workersdo Salaries of all other | 35,364 | 7,938 | 2,659 | 27,426 | 9,479 | 1,429 | 632 | 8,050 | 11,806 | 2,404 | 1,297 | 9,402 |
| 12 | employeesdo Supplies and minerals received for preparation6do | 4,863 | 687 2,483 | 348 539 | 4,176 | 880 2,761 | 127 586 | 89 | 753 2,175 | 1,895 5,993 | 235 693 | 182 313 | 1,660 5,300 |
| 13 14 15 | Fueldo Purchased electric energydo Contract workdo | 1,204 1,853 1,207 | 401 389 573 | 192 310 32 | 803 1,464 634 | 335 417 204 | 87 54 52 | 36 53 | 248 363 152 | 372 888 352 | 96 229 149 | 67 200 14 | 276 659 203 |
| - | Purchased machinery installeddo | 2,664 | 891 | (NA) | 1,773 | 862 | 158 | (NA) | 704 | 826 | 226 | (NA) | 600 |
| 17 | Capital expenditures (develop- ment work, construction, machinery, and equipment)do | 2,856 | 947 | (NA) | 1,909 | 772 | 125 | (NA) | 647 | 865 | 245 | (NA) | 620 |
| 18 | For machinery and equipment onlydo | 2,284 | 802 | 118 | 1,482 | 684 | 125 | 28 | 559 | 738 | 219 | 70 | 519 |
| 19 | Horsepower rating of power equipment81,000 | 264 | 94 | (NA) | 170 | 72 | 18 | (NA) | 54 | 85 | 29 | (NA) | 56 |
| 20 | Water intake91,000,000 gallons | 3,131 | 132 | (NA) | 2,999 | 287 | 16 | (NA) | 271 | 1,764 | 95 | (NA) | 1,669 |

Annot available.

Represents establishments classified for 1954 in the "Mining" industries.

Represents establishments classified for 1954 in the "Manufacturing" industries.

Por 1954, represents value of shipments of products primary to each group of quarries and value of secondary products and services.

For 1939, represents value of products shipped plus capital expenditures less cost of supplies, minerals received for preparation, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "Value added" represents the value added during the year for each group

Table 1B .-- VALUE OF SHIPMENTS, BY KIND, AND MAN-HOURS FOR QUARRYING AT

| _ | TABLE TDv. | | | | | | |
|-------------|--------------------------------------------------------------------------|---------------------------|---------------------|---------------------------------|----------------|-------------------------------|-----------------------------------------------------|
| | | Dimensio | n stone qu total | arries, | Dimension | limestone | quarries |
| Line no. | Item | Total | Quarries only 1 | dressing plants ² | | Quarries only ¹ | Quarries with dressing plants ² |
| | | | | 1 | .954 | | |
| 1 | Value of shipments, total ³ \$1,000 | 78,886 | 18,928 | 59,958 | 20,493 | 3,754 | 16,739 |
| 2 3 4 | Rough stonedo Dressed stonedo Other products and servicesdo | 27,346 46,672 4,868 | 17,926 1,002 | 46,672 | 12,714 | 3,170 584 | 3,353 12,714 672 |
| 5 | Man-hours worked by production and development workers at quarries41,000 | 12,827 | 5,847 | 6,980 | 2,895 | 826 | 2,069 |
| | | | | 1 | .939 | | |
| 6 | Value of shipments, total ³ \$1,000 | 23,357 | 6,356 | 17,001 | 5,064 | 1,541 | 3,523 |
| 7 | Rough stonedo | 8,888 14,003 | (NA) | (NA) 14,003 | 2,588 2,359 | (NA) | (NA) 2,359 |
| 9 | Other products and servicesdo | 466 | (NA) | (NA) | 117 | (NA) | (NA) |
| 10 | Man-hours worked by production and development workers at quarries4 | 12,081 | (NA) | (NA) | 2,157 | (NA) | (NA) |

¹See table 1A, footnote 1. ²See table 1A, footnote 2.

QUARRIES IN THE UNITED STATES: 1954 AND 1939

with expenditures less than \$500; and for 1939, less than \$2,500.)

| with expend | TOUT CO TOOL | σ σπιπη φροί | o, and for | 1,57, 1000 | , σπαπ φε, στ | 50.7 | | | | | | | | |
|---------------------------------------|-------------------------|--------------|-------------|-------------------------------------------|---------------|-------------------------|----------------------|-------------------------------------------|------------------|------------------------|----------|-------------------------------------------|----------|--|
| Dimension slate quarries | Dime | ension mark | ole quarrie | es | Dimer | nsion sands | stone quar | ries | | n trap roc | | | | |
| (quarries with dressing | Total | Quarrie | es only | Quarries with | Total | Quarrie | es only ¹ | Quarries with | Total | Quarrie | s only1 | Quarries with | no. | |
| plants only ²) 1954 | (1954) | 1954 | 1939 | dressing plants ² (1954) | (1954) | 1954 | 1939 | dressing plants ² (1954) | (1954) | 1954 | 1939 | dressing plants ² (1954) | | |
| 6,904 | 10,605 | 3,464 | 879 | 7,141 | 11,090 | 5,302 | 641 | 5,788 | 1,296 | 670 | 27 | 626 | 1 | |
| 5,697 | 8,214 | 2,866 | 721 | 5,348 | 9,060 | 4,188 | 501 | 4,872 | 1,124 | 552 | 19 | 572 | 2 | |
| 1,349 | 1,896 | 637 | 669 | 1,259 | 1,959 | 973 | 287 | 986 | 262 | 147 | 24 | 115 | 3 | |
| 1,259 | 1,721 175 | 612 25 | 652 17 | 1,109 150 | 1,807 152 | 925 48 | 269 18 | 882 104 | 247 15 | 142 5 | 24 | 105 10 | 4 5 | |
| 2,564 | 3,703 | 1,245 | (NA) | 2,458 | 3,557 | 1,752 | (NA) | 1,805 | 495 | 255 | 36 | 240 | 6 | |
| 1,126 | 1,987 | 1,245 | (NA) | 742 | 2,463 | 1,752 | (NA) | 711 | 336 | 255 | 32 | 81 | 7 | |
| 1,438 | 1,716 | | (NA) | 1,716 | 1,094 | ••• | (NA) | 1,094 | 159 | | 4 | 159 | 8 | |
| 5,260 | 7,827 | 2,244 | 655 | 5,583 | 8,214 | 3,629 | 437 | 4,585 | 909 | 457 | 21 | 452 | 9 | |
| 3,598 | 4,561 | 1,505 | 449 | 3,056 | 5,292 | 2,273 | 268 | 3,019 | 628 | 327 | 13 | 301 | 10 | |
| 427 | 862 | 135 | 48 | 727 | 730 | 183 | 29 | 547 | 69 | 7 | | 62 | 11 | |
| 927 125 | ⁷ 2,096 | 511 13 | 49 52 | ⁷ 1,585 | 1,370 282 | 7 ₉₉₀ 161 | 95 32 | ⁷ 825 121 | ⁷ 142 | 7 ₇₅ | 2 | ⁷ 67 | 12 13 | |
| 165 | 270 | 80 | 48 | 190 (7) | 95 | 22 (7) | . 8 | 73 | 52 18 | 4 | 5 1 | 8 14 (⁷) | 14 | |
| 18 | (⁷) 194 | 55 | 9 (NA) | 139 | 445 612 | 413 | 5 (NA) | (⁷) 199 | (⁷) | (⁷) 39 | (NA) | (*) 26 | 15 | |
| 105 | 194 | 22 | (NA) | 139 | 61.2 | 415 | (NA) | 199 | 65 | 39 | (NA) | 26 | 16 | |
| 133 | 207 | 61 | (NA) | 146 | 774 | 472 | (NA) | 302 | 105 | 44 | (NA) | 61 | 17 | |
| 79 | 178 | 43 | 11 | 135 | 550 | 385 | 7 | 165 | 55 | 30 | 2 | 25 | 18 | |
| 24 | 30 | 13 | (NA) | 17 | 43 | 27 | (NA) | 16 | 10 | 7 | 1 | 3 | 19 | |
| 48 | 601 | 16 | (NA) | 585 | 415 | 5 | (NA) | 410 | 16 | • • • | (NA) | 16 | 20 | |

of quarries by quarrying and dressing the primary products of these operations, producing other products, performing services for others,

of quarries by quarrying and dressing the primary products of these operations, producing other products, periodicing other products, and, for 1954, in development of mineral properties.

*Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

*Figures for 1939 exclude the cost of minerals received for preparation. The cost of all rough stone received for preparation in 1954 amounted to \$1,481 thousand.

*The cost of contract work is included with the cost of supplies.

*Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

*Preparation in 1954 amounted to \$1,481 thousand.

*Preparation in 1954 thousand.

*Preparation i

DIMENSION STONE QUARRIES IN THE UNITED STATES: 1954 AND 1939

| Dimension | n granite q | quarries | Dimension slate quarries | Dimensio | on marble o | luarries | Dimension | sandstone | quarries | Dimensio dime n.e. | ie, | Line | |
|--------------|-------------------------------|-----------------------------------------------------|----------------------------------------------------------------|----------------|-------------------------------|-----------------------------------------------------|-----------|-------------------------------|-----------------------------------------------------|--------------------------|-------------------------------|-----------------------------------------------------|--------|
| Total | Quarries only ¹ | Quarries with dressing plants ² | (quarries with dressing plants only ²) | Total | Quarries only ¹ | Quarries with dressing plants ² | Total | Quarries only ¹ | Quarries with dressing plants ² | Total | Quarries only ¹ | Quarries with dressing plants ² | no. |
| | | | | | | 1954 | | | | | | | |
| 28,498 | 5,738 | 22,760 | 6,904 | 10,605 | 3,464 | 7,141 | 11,090 | 5,302 | 5,788 | 1,296 | 670 | 626 | 1 |
| 10,212 | 5,648 | 4,564 | . ::: | 3,831 | 3,421 | 410 | 6,092 | 5,036 | 1,056 | 688 | 651 | 37 | 2 |
| 17,069 | 90 | 17,069 1,127 | 6,438 466 | 5,595 1,179 | 43 | 5,595 1,136 | | 266 | 4,274 458 | 582 26 | 19 | 582 7 | 3 |
| 4,020 | 1,769 | 2,251 | 1,126 | 1,987 | 1,245 | 742 | 2,463 | 1,752 | 711 | 336 | 255 | 81 | 5 |
| | | | | | | 1939 | | | | | | | |
| 8,100 | 3,268 | 4,832 | 3,431 | 4,907 | 879 | 4,028 | 1,828 | 641 | 1,187 | 27 | 27 | | 6 |
| 4,189 | (NA) | (NA) | 9 | 1,298 | (NA) | (NA) | 779 | (NA) | (NA) | 25 | 25 | | 7 |
| 3,664 247 | (NA) | 3,664 (NA) | 3,416 6 | 3,585 24 | (NA) | 3,585 (NA) | 979 70 | (NA) | 979 (NA) | 2 | 2 | : | 8 9 |
| 4,146 | (NA) | (NA) | 1,808 | 2,817 | (NA) | (NA) | 1,121 | (NA) | (NA) | 32 | 32 | ••• | 10 |

³See table 1A, footnote 3. ⁴Excludes man-hours at associated dressing plants.

| Value added in quarrying and creating | | | | | | All | dimension a | tone | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Time | | | Unite | d States, | total | | | New En | gland | | |
| Total | Line | | | | 0 | | Vermo | nt | Massach | | |
| Value added in quarrying and | no. | Trem | Total | | with dressing | Maine | only ¹ | with dressing | | Quarries With dressing | Rhode Island, and |
| Sembler of employees, total 2.325 3.264 9.301 317 411 721 26 602 313 4.544 770 3.200 602 4.544 770 4.544 770 4.544 770 4.544 770 4.544 770 4.544 770 4.544 770 4.544 770 4.544 770 4.544 770 4.544 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 770 | | | 78,886 | 18,928 | 59,958. | 1,904 | 2,243 | 5,988 | 542 | 4,465 | 834 |
| Production and development workers | 2 | Value added in quarrying and dressing4do | 61,713 | 15,138 | 46,575 | 1,494 | 1,930 | 4,912 | 476 | 3,280 | 670 |
| 2 | 3 | Number of employees, total ⁵ | 12,325 | 3,224 | 9,101 | 317 | 411 | 721 | 82 | 602 | 135 |
| development workers | | All other employees | | | | | | | | | 114 21 |
| ## Wages of production and development vorkers and solution of the production and several processes do . 4,863 687 4,376 139 120 131 35 610 88 132 130 130 130 130 130 130 130 130 130 130 | 6 | | 23,155 | 5,893 | 17,262 | 577 | 818 | 1,376 | 149 | 1,012 | 227 |
| development vorkers | | | 57,592 | 12,471 | 45,121 | 1,509 | 1,513 | 3,589 | 397 | 3,803 | 644 |
| 11 Purchased electric energy | 9 | development workersdo Salaries of all other employeesdo Supplies and minerals received | | | 4,176 | 139 | | | 35 | | 392 88 |
| Purchased electric energy | 11 | | | | | | | | | | 115 |
| Capital expenditures (development vork, construction, machinery, and equipment) | 12 | Purchased electric energydo | 1,853 | 389 | 1,464 | 42 | 46 | 129 | 18 | 88 | 27 |
| North Carolina Nort | 14 | Purchased machinery installeddo | 2,664 | 891 | 1,773 | 90 | 27 | 144 | 15 | 61 | 37 |
| Notespower rating of power equipment? | 15 | work, construction, machinery, | 2,856 | 947 | 1,909 | 90 | 19 | 155 | 61 | 16 | 37 |
| Number of employees, total 1,000, 1,000 264 6,560 532 2,273 1,568 528 1,093 1,568 1,192 373 345 338 27 6 29 338 27 6 29 338 27 6 29 338 27 6 29 338 340 147 529 79 623 623 62 64 65 66 6757 65 65 29 438 20 20 20 20 20 20 20 2 | 16 | For machinery and equipment onlydo | 2,284 | 802 | 1,482 | 82 | 14 | 130 | 24 | 16 | 29 |
| Minnesota Minn | 17 | Horsepower rating of power equipment ⁷ 1,000 | 264 | 94 | 170 | 5 | 9 | 12 | 3 | 11 | 5 |
| West North Central Minsouri Missouri Missouri Missouri Missouri Missouri Missouri Quarries with only dressing plants Only dressing plants Only Delota Ransas Virginia Quarries with dressing plants Only Delota Ransas Virginia Quarries with dressing plants Only Delota De | 18 | Water intake81,000,000 gallons | 3,131 | 132 | 2,999 | | | | | (D) | 18 |
| Minnesota Missouri Quarries with only Quarries with oressing plants Quarries only Quarries | | | | | West Nor | | sion stone- | Continue | _ | outh Atlan | tic |
| Quarries | | | Minne | sota | | | · · · · · · · | | | | |
| Value of shipments Value added in quarrying and dressing Value added Val | | | | | | | | Ì | . | | |
| Value added in quarrying and dressing | | | | with dressing | | with dressing | | | Virginia | Quarries | with dressing |
| dressing dre | | | 264 | 6,560 | 532 | | | 529 | 1.093 | | 1 1 |
| Production and development workers | 20 | | | | | 2,273 | 1,568 | 520 | , 1,0/2 | 156 | 1,845 |
| All other employees | | Value added in quarrying and dressing4do | 212 | 3,785 | | | | | | | 1,369 |
| and development workers | | dressing ⁴ do Number of employees, total ⁵ | 50 | | 433 | 1,485 316 | 1,192 194 | 373 | 3 945 | 142 | |
| Wages of production and development workersdo 126 2,946 233 1,053 573 205 560 102 981 | 22 23 | dressing ⁴ do Number of employees, total ⁵ Production and development workers All other employees | 50 | 754 | 433 100 ∫ 96 | 1,485 316 278 | 1,192 194 167 | 373 73 | 3 945 3 284 7 255 | 142 | 1,369 338 |
| development workersdo. 126 2,946 233 1,053 573 205 560 102 981 | 22 23 | dressing4do Number of employees, total5 Production and development workers All other employees | 50 50 | 754 754 | 433 100 { 96 4 | 1,485 316 278 38 | 1,192 194 167 27 | 373 73 67 | 3 94 <u>4</u> 3 28 <u>4</u> 7 25 <u>5</u> 5 29 | 142 49 49 | 1,369 338 |
| 29 Fuel | 22 23 24 25 | dressing4do Number of employees, total5 Production and development workers All other employees Man-hours worked by production and development workers1,000 Principal expenses, total\$1,000 | 50 50 87 | 754 754 1,568 | 433 100 { 96 4 | 1,485 316 278 38 785 | 1,192 194 167 27 | 373 72 67 67 | 3 94 <u>1</u> 3 28 ² 7 25 <u>5</u> 7 529 | 142 49 49 79 | 1,369 338 338 623 |
| 30 Purchased electric energydo 13 279 15 37 58 3 26 5 38 3 26 5 38 3 26 5 38 3 26 5 38 30 43 2 45 30 43 2 45 30 43 2 45 30 43 2 45 30 43 2 45 30 43 2 45 30 43 2 45 30 43 30 43 30 43 30 43 30 43 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 30 45 3 | 22 23 24 25 26 27 | dressing4do Number of employees, total5 Production and development workersAll other employees | 50 50 87 176 126 | 754 754 1,568 5,720 2,946 | 433 100 { 96 4 163 348 { 233 | 1,485 316 278 38 785 2,028 1,053 | 1,192 194 167 27 340 1,094 | 373 73 65 67 403 205 16 | 3 945 3 28- 7 255 5 29 7 529 873 5 566 6 143 | 142 49 49 79 143 102 | 1,369 338 338 623 1,457 |
| Capital expenditures (development work, construction, machinery, and equipment) | 22 23 24 25 26 27 28 | dressing4do. Number of employees, total5 Production and development workersAll other employees | 50 50 87 176 126 31 | 754 754 1,568 5,720 2,946 | 433 100 { 96 4 4 163 348 { 233 16 66 | 1,485 316 278 38 785 2,028 1,053 180 | 1,192 194 167 27 340 1,094 573 139 | 373 73 67 67 67 403 205 16 | 3 941 3 284 7 255 7 529 7 529 873 6 143 | 142 49 49 79 143 102 | 1,369 338 338 623 1,457 981 |
| work, construction, machinery, and equipment) | 22 23 24 25 26 27 28 29 30 | dressing4do. Number of employees, total5 Production and development workers All other employees | 50 50 87 176 126 | 754 754 1,568 5,720 2,946 62,436 59 279 | 433 100 { 96 4 163 348 { 233 16 66 14 15 | 1,485 316 278 38 785 2,028 1,053 180 6757 1 | 1,192 194 167 27 340 1,094 573 139 220 17 58 | 373 72 67 67 403 205 16 99 32 | 94: 3 282 7 25: 5 29 7 529 87: 6 566 6 143 9 12: 9 26 | 142 49 49 79 143 102 31 4 5 | 1,369 338 338 623 1,457 981 424 14 |
| 35 Horsepower rating of power equipment 7 | 22 23 24 25 26 27 28 29 30 31 | dressing4do. Number of employees, total5 Production and development workers All other employees Man-hours worked by production and development workers1,000. Principal expenses, total\$1,000. Wages of production and development workersdo. Salaries of all other employeesdo. Supplies and minerals received for preparationdo Pueldo Purchased electric energydo. Contract workdo. | 50 50 87 176 126 31 6 13 | 754 754 1,568 5,720 2,946 62,436 59 279 (6) | 433 100 { 96 4 163 348 { 233 16 66 14 15 4 | 1,485 316 278 38 785 2,028 1,053 180 6757 1 37 (6) | 1,192 194 167 27 340 1,094 573 139 220 17 58 | 373 73 67 67 401 205 16 32 32 34 | 3 944 3 284 5 255 7 529 8 75 5 566 6 143 9 125 9 125 9 26 | 142 49 49 79 143 102 31 4 5 | 1,369 338 338 623 1,457 981 424 14 |
| equipment7 | 22 23 24 25 26 27 28 29 30 31 32 | dressing4do. Number of employees, total5 | 50 50 87 176 126 13 (D) | 754 754 1,568 5,720 2,946 62,436 59 279 (6) | 433 100 { 96 4 163 348 { 233 16 66 14 15 4 | 1,485 316 278 38 785 2,028 1,053 180 6757 1 37 (6) | 1,192 194 167 27 340 1,094 573 139 220 17 58 87 | 373 71 67 67 403 205 16 99 32 32 46 | 9 94: 3 284 7 255 29 7 529 1 873 5 560 143 9 125 19 26 10 43 | 142 49 49 79 143 102 31 4 5 1 | 1,369 338 338 623 1,457 981 424 14 38 |
| 36 Water intake ³ 1,000,000 gallons 1,305 5 (D) (D) 12 (D) (D) | 22 23 24 25 26 27 28 29 30 31 32 33 | Mumber of employees, total 5 Production and development workers. All other employees. Man-hours worked by production and development workers. 1,000. Principal expenses, total. \$1,000. Wages of production and development workers. do. Salaries of all other employees. do. Supplies and minerals received for preparation. do. Fuel | 50 50 87 176 126 31 6 13 (D) | 754 754 1,568 5,720 2,946 62,436 59 279 (6) 178 | 433 100 { 96 | 1,485 316 278 38 785 2,028 1,053 180 6757 1 37 (6) 96 | 1,192 194 167 27 340 1,094 573 139 220 17 58 87 | 373 71 67 67 403 205 16 99 32 32 46 | 9 94: 3 284 7 25: 5 29 7 529 1 87: 5 16: 6 14: 10 12: 10 2: 10 4: 10 5: 10 6: 10 6: 10 7: 10 | 142 49 49 79 143 102 31 4 5 1 2 | 1,369 338 338 623 1,457 981 424 14 38 45 |
| For footnotes, see end of table, | 22 23 24 25 26 27 28 29 30 31 32 33 34 35 | Mumber of employees, total ** Production and development workers. All other employees. Man-hours worked by production and development workers | 50 87 176 126 31 6 13 (D) (D) (D) | 754 754 1,568 5,720 2,946 62,436 59 279 (6) 178 177 171 | 433 100 { 96 4 163 348 { 233 16 66 14 15 4 31 31 31 | 1,485 316 278 38 785 2,028 1,053 180 6757 1 37 (6) 96 103 96 | 1,192 194 167 27 340 1,094 573 139 220 17 58 87 45 | 373 713 673 674 403 205 16 30 32 33 46 30 | 9 945 3 284 7 255 5 29 7 529 873 5 566 143 9 125 9 125 9 26 9 33 9 43 | 142 49 49 79 143 102 31 4 5 1 2 29 17 | 1,369 338 338 623 1,457 981 424 14 38 45 |

| | QUARRIES, BY GEOGRAPHIC DIVISIONS AND STATES: 1954 | | | | | | | | | | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--|--|--|
| | | | | | | All d | imension | All dimension stoneContinued | | | | | | | | | | |
| | | | Middle A | Atlantic | | | | | Ea | st North C | entral | | | | 1 | | | |
| | | New York | | Pennsy | lvania | | Ohio | | Ind | iana | | | Wis | consin | Line | | | |
| | Quarri only | les dr | arries with essing ants ² | Quarries only1 | Quarries with dressing plants ² | Quarrie only ¹ | | th sing | Quarries only ¹ | Quarries with dressing plants ² | Mar | linois and chigan | Quarries only ¹ | Quarries with dressing plants ² | no. | | | |
| | | 428 | 1,675 | 1,148 | 3,919 | 3; | 28 | 4,374 | 2,137 | 11,84 | .6 | 273 | 1,514 | 1,791 | 1 | | | |
| | | 380 | 1,260 | 909 | 3,278 | 2: | 85 | 3,881 | 1,858 | 9,88 | 12 | 210 | 1,101 | 1,334 | 2 | | | |
| | | 55 | 235 | 203 | 755 | : | 29 | 773 | 272 | 1,64 | 0 | 33 | 199 | 262 | 3 | | | |
| | } | 55 | 235 | { 194 9 | 692 63 | } : | 29 | 773 | { 252 20 | 1,57 6 | ⁷⁹]} | 33 | { 191 | | | | | |
| | | 109 | 480 | 388 | 1,416 | | 64 | 1,419 | 498 | 3,12 | 8 | 60 | 370 | 485 | 6 | | | |
| | , | 233 | 1,253 | 769 | 3,111 | , 1 ₂ | 43 : | 3,400 | 1,174 | 8,12 | 9 | 161 | 1,119 | 1,405 | 7 | | | |
| | } | 189 | 793 | { 514 30 | 2,177 274 | } } | 92 2 | 2,822 | 807 | 5,88 38 | 2 | 95. | 662 44 | | | | | |
| | | 30 12 2 | 346 24 23 | 116 62 10 | 468 78 102 | } 6 <u>1</u> | 51 | 519 59 | 191 24 34 | ⁶ 1,46 12 26 | 6 | 48 15 | 371 18 21 | 54 | 10 11 12 | | | |
| | | | 67 | 37 | 12 | (| 6) | | 31 | (6 | | 3 | 3 | | | | | |
| | | 33 | 40 | 126 | 48 | (1 | 0) | (D) | 77 | 49 | 8 | 19 | 59 | 61 | 14 | | | |
| | | 29 | 85 33 | 112 108 | 67 49 | | D) | (D) | 78 69 | 39 36 | | 22 19 | 59 56 | | 15 16 | | | |
| | | | | | | ,, | | `-' | | | | - | | , , | | | | |
| | | 4 | 6 | 9 | 16 | | 2 | 9 | 7 | 2 | 8 | 3 | 5 | 11 | 17 | | | |
| | | | 89 | 1 | 180 | | | 321 | 17 | 25 | 4 | | 1 | | 18 | | | |
| | | | | | | All di | imension s | stoneCo | ontinued | | | | | | | | | |
| | South | Atlantic | Continu | ed East So | uth Central | V | Vest South | Centra | 1 | М | ountain | | P | acific | Į . | | | |
| | Geor | gia | Marylan West | ıd, | | | | Te | exas | | | Idaho, | | | | | | |
| | Quarries only ¹ | Quarrie with dressin plants ² | Virgini South | Tennesse | Kentucky and Alabama | Arkenses | Oklahoma | Quarrie: only ¹ | dressing | Colorado | Arizona | New Mexico, Utah, and | Californi | Washington and Oregon | | | | |
| | 2,098 | 3,547 | 64 | 2 5,06 | | | | | plants ² | | | Nevada | | | 1 | | | |
| | 1,640 | 2,886 | | 1 | 2,297 | 418 | 450 | 103 | | 518 | 583 | Nevada 268 | 55 | 7 413 | 19 | | | |
| И | 366 | | 52 | 3,82 | | 418 303 | 450 295 | 103 76 | 1,698 | 518 343 | 583 387 | - | | | 19 | | | |
| ı | | 705 | 52 13 | | 4 1,894 | | | | 1,698 | | | 268 | 45 | 4 378 | | | | |
| | { 359 7 | 705 627 78 | 13 | 5 1,02 | 4 1,894 4 416 7 366 | 303 | 295 | 76 | 1,698 1,398 285 | 343 | 387 | 268 | 45 | 4 378 5 66 | 20 | | | |
| | | 627 | 13 | 1,02 7 97 8 4 | 4 1,894 4 416 7 366 7 50 | 303 92 | 295 69 | 76 26 | 1,698 1,398 285 285 | 343 79 | 387 59 | 268 238 56 | 45 6 | 4 378 5 66 5 66 | 20 21 22 | | | |
| | 1 7 | 627 78 | 13 12 | 1,02 7 97 8 4 4 1,78 | 4 1,894 4 416 7 366 7 50 6 772 | 303 92 } 92 | 295 69 69 | 76 26 26 | 1,698 1,398 285 285 609 | 343 79 79 | 387 59 59 | 268 238 56 | 45 6 6 | 4 378 5 66 5 66 2 114 | 20 21 22 23 24 | | | |
| | 666 | 627 78 1,252 | 13 12 26 44 30 | 1,02. 97 8 4 4 1,78 8 3,57 | 4 1,894 4 416 7 366 7 50 6 772 7 1,651 5 1,020 | 303 92 92 160 | 295 69 69 122 | 76 26 26 34 | 1,698 1,398 285 285 609 1,074 | 343 79 79 79 | 387 59 59 | 268 238 56 56 | 45 6 6 13 | 4 378 5 66 5 66 2 114 9 339 | 20 21 22 23 24 25 | | | |
| The second secon | 666 1,271 758 31 319 | 1,252 2,589 1,526 386 513 | 13 12 26 44 30 3 | 1,02. 7 97 8 4 4 1,78 8 3,57 15 2,06 3 28 | 4 1,894 4 416 7 366 7 50 6 772 7 1,651 5 1,020 9 212 9 6318 | 303 92 92 160 318 195 | 295 69 69 122 309 155 | 76 26 26 34 75 48 | 1,698 1,398 285 285 609 1,074 793 | 343 79 79 143 392 234 | 387 59 59 104 377 173 | 268 238 56 56 100 221 161 | 45 6 6 13 35 24 | 4 378 5 66 5 66 2 114 9 339 1 286 5 29 | 20 21 22 23 24 25 26 27 28 | | | |
| The second second second second | 666 1,271 758 31 | 627 78 1,252 2,589 1,526 386 | 13 12 26 44 33 3 7 | 1,02. 7 97. 8 4. 4 1,78. 8 3,57. 15 2,06. 28 7. 1,05. 2 1,05. | 4 1,894 4 416 7 366 7 50 6 772 7 1,651 5 1,020 9 6318 5 17 | 303 92 92 160 318 195 | 295 69 69 122 309 155 | 76 26 26 34 75 48 | 1,698 1,398 285 285 609 1,074 793 204 25 | 343 79 79 143 392 234 | 387 59 59 104 377 | 268 238 56 56 100 221 161 | 45 6 6 13 35 24 4 | 4 378 5 66 5 66 2 114 9 339 1 286 5 29 8 14 | 20 21 22 23 24 25 26 27 28 29 | | | |
| The second secon | 7 666 1,271 { 758 31 319 34 99 | 1,252 2,589 1,526 386 513 38 112 | 13 12 26 44 30 3 | 1,02. 7 97. 8 4. 4 1,78. 8 3,57. 15 2,06. 28 7. 1,05. 2 1,05. | 4 1,894 4 416 7 366 7 50 6 772 7 1,651 5 1,020 9 6318 9 17 1 84 8 (6) | 303 92 92 160 318 195 6108 14 | 295 69 69 122 309 155 | 76 26 26 34 75 48 617 10 | 1,698 1,398 285 285 609 1,074 793 204 25 42 10 | 343 79 79 143 392 234 44 16 1 | 387 59 59 104 377 173 | 268 238 56 56 100 221 161 39 15 | 45 6 6 13 35 24 4 2 | 4 378 5 66 5 66 2 114 9 339 1 286 5 29 8 14 1 6 | 20 21 22 23 24 25 26 27 28 29 30 31 | | | |
| | 7 666 1,271 { 758 31 319 34 99 30 94 | 627 78 1,252 2,589 1,526 386 513 38 1122 14 | 13 12 26 44 30 3 7 1 1 | 1,02. 78 4 4 1,78 8 3,57 6 2,06 3 28 77 1,05 6 9 | 4 1,894 4 416 7 366 7 50 6 772 7 1,651 5 1,020 212 9 6318 17 1 84 8 (6) 3 65 | 303 92 92 160 318 195 6108 14 1 (6) | 295 69 69 122 309 155 6131 6 17 (6) | 76 26 26 34 75 48 617 10 | 1,698 1,398 285 285 609 1,074 793 204 25 42 10 37 | 343 79 79 143 392 234 44 16 1 97 | 387 59 59 104 377 173 11 15 1 | 268 238 56 56 1000 221 161 39 15 6 | 45 66 13 35 24 4 2 4 2 | 4 378 5 66 5 66 2 114 9 339 1 286 5 29 14 6 4 4 8 19 | 20 21 22 23 24 25 26 27 28 29 30 31 32 | | | |
| | 7 666 1,271 { 758 31 319 34 99 30 94 | 627 78 1,252 2,589 1,526 386 513 38 1122 14 | 13 12 26 44 30 3 7 1 1 | 1,02. 7, 97, 8 4 1,78 8 3,57 1,53 2,06 3 28 7, 1,05 2,2 6 5,5 9 6 8 23 | 4 1,894 4 416 7 366 7 50 6 772 7 1,651 5 1,020 212 9 6318 17 1 84 8 (6) 3 65 | 303 92 92 160 318 195 6108 14 1 (6) (D) | 295 69 69 122 309 155 6131 6 (7) (6) (D) | 76 26 26 34 75 48 617 10 (b) (D) | 1,698 1,398 285 285 609 1,074 793 204 25 42 10 37 | 343 79 79 143 392 234 44 16 1 97 47 | 387 59 59 104 377 173 11 15 1 177 16 | 268 238 566 566 1000 221 161 399 19 6 9 | 45 66 13 35 24 4 2 4 2 | 4 378 5 66 5 66 2 114 9 339 1 286 5 29 14 6 4 4 8 19 | 20 21 22 23 24 25 26 27 28 29 30 31 32 | | | |
| | 7 666 1,271 { 758 31 319 34 99 30 94 | 627 78 1,252 2,589 1,526 386 513 38 1122 14 | 13 12 26 44 30 3 7 1 1 | 1,02 7, 97 8 4 4 1,78 8 3,57 15 2,06 3 28 1,05 2 6 6 9 18 23 17 21 19 19 | 4 1,894 4 416 7 366 7 50 6 772 7 1,651 5 1,020 212 9 6318 177 1 84 8 (6) 3 65 4 81 6 65 | 303 92 92 160 318 195 6108 14 1 (6) (D) | 295 69 69 122 309 155 6131 6 (7) (6) (D) | 76 26 26 34 75 48 617 10 (b) (D) | 1,698 1,398 285 285 609 1,074 793 204 25 42 10 37 18 18 | 343 79 79 143 392 234 44 16 1 97 47 | 387 59 59 104 377 173 11 15 1 177 16 | 268 238 566 566 1000 221 161 399 19 6 9 | 45 6 6 13 35 24 4 2 4 2 | 4 378 5 66 5 66 2 114 9 339 1 286 5 29 14 6 4 4 8 19 | 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 | | | |

| | | | | | | | CS FOR DIM | ENSION STO | ONE QUARRIES |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------|-----------------------------------------------------|-------------------------------------------------------------------------------|------------------------|-----------------------------------------------------|----------------------|---------------------------------------------------------------------------|
| | | IIn | ited State | | Dimension | limestone | North | Central | |
| | | | Tied Blate | | | Ind | iana | | onsin |
| Line no. | Item | Total | Quarries only 1 | Quarries with dressing plants ² | Middle Atlantic (Pennsyl- vania) (quarries only ¹) | Quarries only1 | Quarries with dressing plants ² | Quarries | Quarries |
| 1 | Value of shipments ³ \$1,000 | 20,493 | 3,754 | 16,739 | 383 | 1,760 | 11,846 | 1,046 | 1,416 |
| 2 | Value added in quarrying and dressing4do | 16,686 | 2,942 | 13,744 | 298 | 1,517 | 9,882 | 690 | 1,036 |
| 3 | Number of employees, total ⁵ | 2,850 | 500 | 2,350 | 55 | 222 | 1,640 | 116 | 178 |
| 4 5 | Production and development workers | 2,693 157 | 472 28 | 2,221 129 | 53 2 | 204 18 | 1,579 61 | | 1 |
| 6 | Man-hours worked by production and development workers | 5,391 | 872 | 4,519 | 110 | 381 | 3,128 | 216 | 343 |
| 7 | Principal expenses, total\$1,000 | 14,076 | 2,335 | 11,741 | 203 | 961 | 8,129 | | 1 |
| 8 9 10 | Wages of production and development workersdo Salaries of all other employeesdo Supplies and minerals received for | 9,479 880 | 1,429 | 8,050 753 | 129 | 646 82 | 5,884 382 | 26 | 73 |
| 11 | preparationdododododo | 2,761 335 | 586 87 | 2,175 248 | 635 25 | 185 17 | 61,469 126 | ! 70 | 1 46 |
| 12 13 | Purchased electric energydododo | 417 204 | 54 52 | 363 152 | (⁶) | 31 (⁶) | 268 (6) | | 1 1 7 |
| 14 | Purchased machinery installeddo | 862 | 158 | 704 | (D) | 49 | 498 | (D) | 45 |
| 15 | Capital expenditures (development work, construction, machinery, and equipment)do | 772 | 125 | 647 | (D) | 39 | 397 | (D) | 43. |
| 16 | For machinery and equipment onlydo | 684 | 125 | 559 | (D) | 39 | 365 | (D) | 42 |
| 17 | Horsepower rating of power equipment ⁷ 1,000 | 72 | 18 | 54 | 2 | 5 | 28 | 2 | 9 |
| 18 | Water intake ⁸ 1,000,000 gallons | 287 | 16 | 271 | nsion gran | 14 | 254 | | • • • • • • • • • • • • • • • • • • • • |
| | | | North Cent | | T Gran | _ | outh and W | est | |
| | | | | | | Georgia | | N | aryland, North |
| | | Wisconsin and Missouri | Minnesot | South Dakota | | ries with | rries | and Control of Water | arolina, colorado, shington, regon, and lifornia ² |
| 19 | Value of shipments ³ \$1,000 | 956 | 5,50 | 1,5 | 68 2, | 048 | 1,780 | 1,279 | 2,585 |
| 20 | Value added in quarrying and dressing4do | 786 | 2,89 | 1,1 | 92 1, | 589 | 1,351 | 1,003 | 1 ,9 99 |
| 21 | Number of employees, total ⁵ | 184 | 66 | | | 355 | 332 | 184 | 470 |
| 22 23 | Production and development workers | 173 11 | | | 67 27 | 348 7 | 310 22 | 181 | 442 28 |
| 24 | Man-hours worked by production and development workers | 326 | | | | 651 | 598 | 407 | 894 |
| 25 26 | Principal expenses, total | 695 | 1 ′ | | - | 246] 741 | 761 | 820 548 | 2,0 1 0 1,204 |
| 27 28 | Wages of production and development workersdo Salaries of all other employeesdo Supplies and minerals received for preparationdo. | 471 56 6 ₁₂₆ | 34 | .7 1 | 39 | 31 314 | 110 | 219 | 184 |
| 29 30 | Fuel | 17 25 | 3 | 5 | 17 58 | 32 | 27 | 10 | 24 61 |
| 31 | Contract workdo | (6) | | | 87 | 30 | (⁶) | | 40 |
| 32 33 | Purchased machinery installeddo Capital expenditures (development work, | 38 | 13 | 5 | 45 | 78 | 93 | 31 | 56 |
| | construction, machinery, and equipment)do | 36 | | | 51 | 93 | 109 | 21 | 92 |
| 34 | For machinery and equipment onlydo | 29 | | 1 | 46 | 76 | 87 | 21 | 69 |
| 35 | Horsepower rating of power equipment ⁷ 1,000 | 5 | | 9 | 5 | 10 | 9 | 3 | 10 |
| 36 | Water intake ⁸ 1,000,000 gallons | (D) | (D | " . | ·· <u> </u> | (D) | 18 | (D) | 4 |

For footnotes, see end of table.

| Dimension limestone—Continued | | | | | | | | | Dimension granite | | | | | | | | | | | | |
|-------------------------------|----------------------------------------------------------------|-------------------------------------------|------------|-----------------------------------------|--------------|-----------|-----------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------|--------------------|------------------------------|------------|-----------------------------------------------------|---------------------------------------|------------|----------------------------------------------------|----------|----------------------------------------------------------|------------------------------------------|-----------------------------------------------------------|------------|
| \vdash | North C | entralC | | | | | and We | est | United States New England | | | | | | | | | | | | |
| Mi | nnesota | Kansas | Mi Io | linois, chigan, wa, and ssouri | Te | xas | Flor Kentu Tenne Alah Arkar Oklah Color ar | nia, gia, rida, ucky, essee, oama, nsas, noma, rado, | Total | L | Quarrie only ¹ | | Quarries with dressing plants ² | Vermon | ıt | Maine an Massachuse | | New Hampshire Rhode Island, and Connectic | , (New a: Pen va: | ddle antic York nd nsyl- nia) | Line no |
| | 1,317 | 455 | | 330 | | 839 | | 1,101 | 28, | 498 | 5,7 | '38 | 22,760 | 4, | 976 | 6,4 | 06 | 79 | 6 | 597 | 1 |
| | 1,100 | 329 | | 272 | | 676 | | 886 | 20, | 932 | 4,5 | 90 | 16,342 | 2 4, | ,094 | 4,8 | 45 | 64 | 1 | 535 | 2 |
| , | 143 | 60 | , | 60 | | 176 | | 200 | | ,009 | | 67 | 3,042 | | 523 | | 82 | 13 | - 1 | 94 | 3 |
| } | 143 | { 52 8 | } | 60 | { | 171 5 | | 176 24 | 3, | 662 34 7 | | 17 50 | 2,745 297 | | 492 31 | | 74 08 | 10 ⁰ | | 89 5 | 5 |
| | 309 | 122 | | 91 | | 337 | | 354 | 7, | 445 | 1,7 | '69 | 5,676 | 5 | 970 | 1,5 | 17 | 21 | 8 | 178 | 6 |
| | 864 | 339 | | 210 | | 569 | | 888 | | 306 | 3,8 | | 17,500 | i | 808 | 5,2 | | 62: | | 385 | 7 |
| } | 641 | { 173 16 | } | 151 | { | 394 21 | | 538 112 | | 806 895 | 2,4 2 | .04 !35 | 9,402 1,660 | | 779 161 | | 56 | 37: 8: | | 306 17 | 8 |
| | ⁶ 158 30 | 87 18 | ι | 633 26 | 5 | 93 23 | | 181 | 5, | 993 372 | | 93 96 | 5,300 276 | | 684 55 | 61,3 | 08 27 | 110 | | 43 10 | 10 11 |
| | 35 (⁶) | 3 42 | ſ | (⁶) | ι | 22 16 | | 32 7 | | 888 352 | | 29 49 | 659 201 | | 129 (6) | | 27 6) | 2' | | 9 | 12 13 |
| | 48 ! | 30 | · | 32 | | 23 | | 61 | | 826 | 2 | 26 | 600 | | 128 | 1 | 64 | 31 | 7 | 21 | 14 |
| | 54 | 54 | | 33 | | 14 | | 84 | | 865 | 2 | 45 | 620 | | 114 | 1 | 65 | 3' | 7 | 21 | 15 |
| | 48 | 32 | | [.] 32 | | 14 | | 58 | | 738 | 2 | 19 | 519 | , | 114 | 1 | 20 | 29 | 9 | 21 | 16 |
| | 3 | 5 | | 3 | | 5 | | 10 | | 85 | | 29 | 56 | 5 | 11 | : | 16 | | 5 | 2 | 17 |
| - | (D) | (D) | DH | (D) mension | glat | (D) | | (D) | 1, | 764 | | 95 | 1,669 | | (D) | on marble | 73 | (D |) | (D) | 18 |
| 1 | United | T | | | | tlanti | .c | | | | U | nit | ed States | | | | Г | South a | nd Wes | t | |
| (qı | States uarries with dressing plants only ²), total | New England (Maine and Vermon | | New Yor | k | Penr | syl- ia | We (Vir a | th and est ginia and Cornia) | 1 | Total | Ç | warries only ¹ | Quarrie with dressing plants | ıg | East (Vermont, Illinois, and Missouri) | Т | ennessee | Georgian Kentu Kentu Alaba Arka | rth lina, rgia, ucky, ama, nsas, Nevada | |
| | 6,904 | 1,9 | 911 | 1, | 052 | | 3,280 | | 661 | | 10,605 | | 3,464 | 7,1 | 41 | 4,148 | | 3,051 | | 3,406 | 19 |
| | 5,697 | 1, | | | 796 | | 2,737 | | 575 | | 8,214 | | 2,866 | 5,2 | | 3,089 | | 2,211 | | 2,914 | 20 |
| | 1,349 1,259 | 1 | 371 361 | | 148 136 | | 636 582 | | 194 180 | | 1,896 1,721 | | 637 | 1,2 | | 678 628 | | 546 510 | | 672 583 | 21 |
| | 90 | | 10 | | 12 | | 54 | | 14 | | 175 | | 25 | | 50 | 50 | | 36 | | 89 | 23 |
| | 2,564 | | 708 | | 315 | | 1,208 | | 333 | | 3,703 | | 1,245 | 2,4 | | 1,535 | | 964 | | 1,204 | 24 |
| | 5,260 3,598 | | | | 719 371 | | 2,630 1,828 | | 486 352 | | 7,827 4,561 | | 2,244 | 5,2 3.0 | | 3,302 1.995 | | 2,225 | | 2,300 | 25 26 |
| | 3,598 427 | | 047 45 | | 83 | | 242 | | 57 | | 4,561 862 | | 1,505 | 3,(| | 1,995 235 | | 1,170 228 | | 1,396 399 | 26 27 |
| | 927 125 | | 239 45 | | 242 | | 403 59 | | 43 15 19 | | 62,096 38 | | 511 13 | 61,5 | 25 25 | 61,004 2 | | 723 17 87 | | 369 19 | 28 29 |
| | 165 18 | | 39 10 | | 14 3 | | 93 5 | | | | 270 (⁶) | | 80 | i | (6) | 66 (⁶) | | | | 117 | 30 31 |
| | 105 | | 33 | | 20 | | 33 | | 19 | | 194 | | 55 | 1 | 39 | (D) | | (D) | | 56 | 32 |
| | 133 | 1 | 44 | | 29 | | 50 | | 10 | | 207 | | 61 | | 46 | (D) | | (D) | | 69 | 33 |
| | 79 | | 19 | | 17 | | 33 | | 10 | | 178 | | 43 | | 35 | 95 | | 27 | | 56 | 34 |
| | 24 | | 6 | | 4 | | 12 20 | | 2 | | 30 | | 13 | | 17 | 13 | | 8 | | 9 | 35 |
| | 48 | · I | 22 | | ••• | | 20 | | 6 | | 601 | | 16 | | 585 | (D) | | (D) | | 278 | 36 |

| | | | Dimension sandsto | one . |
|--------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------------------|------------------------------------------|
| | | - | United States | |
| Line no. | Item | Total | Quarries only ¹ | Quarries with dressing plants |
| 1 | Value of shipments ³ \$1,000 | 11,090 | 5,302 | 5,788 |
| 2 | Value added in quarrying and dressing4do | 9,060 | 4,188 | 4,872 |
| 3 | Number of employees, total ⁵ | 1,959 | 973 | 986 |
| 4 5 | Production and development workers. All other employees | | 925 48 | 882 104 |
| 6 | Man-hours worked by production and development workers | 3,557 | 1,752 | 1,805 |
| 7 | Principal expenses, total\$1,000 | 8,214 | 3,629 | 4,585 |
| 8 9 10 11 12 13 | Wages of production and development workers | 5,292 730 1,370 282 95 445 | 2,273 183 8990 161 22 (⁸) | 3,019 547 8825 121 73 (8) |
| 14 | Purchased machinery installeddo | 612 | 413 | 199 |
| 15 | Capital expenditures (development work, construction, machinery, and equipment)do | 7714 | 472 | 302 |
| 16 | For machinery and equipment onlydo | 550 | 385 | 165 |
| 17 | Horsepower rating of power equipment ⁷ | 43 | 27 | 16 |
| 18 | Water intake ⁸ | 415 | 5 | 410 |

Dwithheld to avoid approximately disclosing figures of individual companies.

See table 1A, footnote 1.

See table 1A, footnote 2.

See table 1A, footnote 3.

See table 1A, footnote 4.

| Dimension sandstoneContinued | | | | | | | | | | | | | |
|-----------------------------------|-----------------------------------------|--------------------------------------|----------------------------------------------------------------|-----------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------|--|--|--|--|--|
| | Ea | st | | | South | | West | | | | | | |
| Pennsylvania | Ohio | Massachusetts and New York | Indiana, Michigan, Wisconsin, Missouri, and Kansas | Temessee | Maryland, Virginia, West Virginia, Georgia, Kentucky, and Alabama | Arkansas, Oklahoma, and Texas (quarries only ¹) | (Idaho, Colorado, New Mexico, Utah, Nevada, Washington, and California) | Line no. | | | | | |
| 869 | 4,702 | 886 | 541 | 1,984 | 304 | 341 | 1,463 | 1 | | | | | |
| 678 | 4,166 | 670 | 461 | 1,586 | 202 | 223 | 1,074 | 2 | | | | | |
| 158 | 802 | 126 | 80 | 470 | 64 | 75 | 184 | 3 | | | | | |
| 148 10 | 715 87 | 116 10 | 80 | { 459 | } 64 | { 68 7 | 169 15 | | | | | | |
| 289 | 1,483 | 244 | 169 | 809 | 114 | 115 | 334 | 6 | | | | | |
| 671 | 3,543 | 727 | 338 | 1,336 | 262 | 264 | 1,073 | 7 | | | | | |
| 441 35 111 43 5 36 | 2,458 456 6483 87 59 (6) | 414 65 6212 22 14 (6) | } 245 677 16 (6) | 884 61 333 50 8 | } 159 79 18 6 | { 115 23 74 { 10 42 | 608 58 81 45 8 273 | 9 10 11 12 | | | | | |
| 98 | 127 | 34 | 41 | 189 | 41 | (D) | (D) | 14 | | | | | |
| 102 | 220 | 66 | 54 | 182 | 42 | (D) | (D) | 15 | | | | | |
| 101 | 117 | (D) | 44 | 169 | (D) | (D) | (D) | 16 | | | | | |
| 8 | 10 | 4 | 4 | 6 | 2 | 1 | 8 | 17 | | | | | |
| (D) | 321 | 89 | (D) | ••• | | | (D) | 18 | | | | | |

See table 1A, footnote 5. See table 1A, footnote 7. See table 1A, footnote 8. See table 1A, footnote 9.

Table 3.--QUANTITY AND VALUE OF DIMENSION STONE FOR THE UNITED STATES: 1954 AND 1939 (Includes production at stone quarries and as secondary products in other industries)

| | | | T T | |
|----------------------------------------------|------------------------------------------|--------------------------------------------|--------------------------------|--------------------------------------------|
| Type of dimension stone | | 954 Interplant transfers ¹ | 19 produ | 39 ction |
| | Quantity ² (1,000 short tons) | Value f.o.b. mine or plant (\$1,000) | Quantity (1,000 short tons) | Value f.o.b. mine or plant (\$1,000) |
| All dimension stone, total | 2,954 | 73,726 | 3,273 | 23,562 |
| Rough stone Dressed stone | 1,994 960 | 26,924 46,802 | 2,586 687 | 9,527 14,035 |
| Limestone, total | 1,246 | 19,985 | 1,342 | 5,267 |
| Rough stone | 868 378 | 7,180 12,805 | 1,171 171 | 2,892 2,375 |
| Granite, total | 739 | 26,799 | 748 | 8,025 |
| Rough stone | 512 227 | 9,728 17,071 | 571 177 | 4,357 3,668 |
| Slate, total | 162 | 6,451 | 178 | 3,432 |
| Rough stone | 162 | 6,451 | 5 173 | 16 3,416 |
| Marble, total | 117 | 8,905 | 178 | 4,928 |
| Rough stone | 79 38 | 3,294 5,611 | 126 52 | 1,331 3,597 |
| Sandstone, total | 545 | 10,219 | 791 | 1,861 |
| Rough stone Dressed stone | 400 145 | 5,943 4,276 | 677 114 | 882 979 |
| Trap rock and dimension stone, n.e.c., total | 145 | 1,367 | 36 | 49 |
| Rough stone | 135 10 | 779 588 | 36 | 49 |

 $^{^1}$ Represents shipments and interplant transfers less stone received from other establishments for dressing. 2 Quantities are preliminary and are partly estimated from data reported in other units of measure.

1954 Census of Mineral Industries

September 1956

Series:

MI-14-2

CRUSHED STONE

The value of shipments of all crushed and broken stone quarries in the United States in 1954 amounted to \$484 million. Of this total, shipments from quarries and plants classified in the crushed and broken stone industries were valued at \$465 million and shipments from quarries included in establishments classified in manufacturing and wholesale trade industries were valued at \$19 million. These figures exclude the value of stone produced and consumed in the same establishment in the manufacture of cement and lime, amounting to approximately \$100 million. Principal expenses for quarries and plants in the crushed and broken stone industries included \$144 million for wages and salaries, \$89 million for supplies and minerals received for preparation, \$28 million for fuel and purchased electric energy, and \$11 million for contract work. The cost of purchased machinery installed at these quarries and plants was \$45 million. Employment at these operations averaged about 37 thousand. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$45 million. The total horsepower of equipment available for use was 2, 762 thousand. Water intake for use during the year, including mine water, was 60 billion gallons.

Quarries producing crushed and broken stone, either as the major product, as a secondary product, or for consumption at an associated cement or lime plant, were operated in 47 States and in Hawaii and Alaska in 1954. The value of shipments of crushed and broken stone exceeded \$15 million in 1954 for each of 10 States. Ranked in order of value of shipments of stone, these States were Pennsylvania, Ohio, Illinois, New York, Wisconsin, Michigan, California, New Jersey, Missouri, and Iowa. The total output of 369 million tons of crushed and broken stone in the United States in 1954, including that produced and consumed in the manufacture of hydraulic cement and lime, was about two and three-quarters times as large as production in 1939, the year covered by the preceding Census of Mineral Industries.

The crushed and broken stone industries, as defined in the Standard Industrial Classification, represent establishments primarily engaged in mining or quarrying crushed and broken stone. In 1954, these quarries in the United States accounted for shipments of 283 million tons of crushed and broken stone valued at \$434 million.

Also included in this release are statistics for crushed and broken stone quarries operated in conjunction with plants producing hydraulic cement, quicklime, or hydrated lime. If a quarry was part of such an establishment, the entire establishment was classified in the "Hydraulic cement" industry or in the "Lime" industry according to whether the primary product is cement or lime. Separate statistics for 1954 relating to the quarrying activities at such establishments were obtained as part of the 1954 Census of Manufactures. In that year, quarries operated in conjunction with cement or lime plants produced 70 million tons of crushed and broken stone, primarily limestone, for use in associated cement or lime plants at the same location as the quarries. In addition, these quarries shipped for use elsewhere about 8 million tons of crushed and broken limestone valued at \$15 million.

Selected statistics are also shown in this release for crushed and broken stone operations at establishments where the primary product is bituminous concrete or ready-mixed concrete. Here, if a quarry was part of such an establishment, the entire establishment was classified either in the manufacturing industry "Paving mixtures and blocks" or in the wholesale trade industry "Lumber and construction materials," respectively, if the value added by manufacturing exceeded the value added in quarrying. In 1954, such quarries shipped about 3 million tons of crushed and broken stone valued at \$4 million.

This release excludes statistics for quarries operated by Federal, State, and local governments and institutions. Such operations accounted for about 5 percent of the total production of crushed and broken stone in 1953, according to the Bureau of Mines.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

CRUSHED AND BROKEN LIMESTONE--The value of shipments of all crushed and broken limestone quarries in 1954 amounted to \$345 million. Of this total, shipments from quarries and plants classified in the crushed and broken limestone industry were valued at \$329 million and shipments from quarries included in establishments classified in manufacturing and wholesale trade industries were valued at about \$16 million. Principal expenses for quarries and plants in the crushed and broken limestone industry included \$107 million for wages and salaries, \$61 million for supplies and minerals received for preparation, \$21 million for fuel and purchased electric energy, and \$7 million for contract work. The cost of purchased machinery installed was \$33 million. Employment at these operations averaged 28 thousand. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$32 million. The total horsepower of equipment available for use was 2,173 thousand. Water intake for use during the year, including mine water, was 54 billion gallons.

Quarries producing crushed and broken limestone, either as the major product, as a secondary product, or for consumption at an associated cement or lime plant, were operated in 45 States in 1954. The value of shipments of crushed and broken limestone exceeded \$10 million in 1954 in each of 11 States. Ranked in order of value of shipments of limestone, the five leading States were Pennsylvania, Ohio, Illinois, New York, and Michigan. The total output of 302 million tons of crushed and broken limestone and calcareous marl in 1954 was about two and three-quarter times as large as production in 1939.

The "Crushed and broken limestone" industry, as defined in the Standard Industrial Classification, represents establishments primarily engaged in mining or quarrying crushed and broken limestone, including related rocks, such as dolomite, cement rock, marl, travertine, and calcareous tufa. Quarries operated in conjunction with cement and lime plants are included in this industry when separate reports are available; but the stone crushing operations performed at the plant are not included.

CRUSHED AND BROKEN GRANITE--The value of shipments of all crushed and broken granite quarries in 1954 amounted to \$31,230 thousand. Of this total, shipments from quarries and plants classified in the crushed and broken granite industry were valued at \$30,875 thousand and shipments from quarries included in establishments classified in manufacturing and wholesale trade industries were valued at \$355 thousand. Principal expenses for quarries and plants in the crushed and broken granite industry included \$8,705 thousand for wages and salaries, \$6,506 thousand for supplies and minerals received for preparation, \$1,585 thousand for fuel and purchased electric energy, and \$729 thousand for contract work. The cost of purchased machinery installed was \$3,041 thousand. Employment at these operations averaged 2,529. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$3,187 thousand. The total horsepower of equipment available for use was 176 thousand. Water intake for use during the year, including mine water, was 3,220 million gallons.

Quarries producing crushed and broken granite either as the major product or as a secondary product were operated in 26 States in 1954, with North Carolina, Georgia, California, and South Carolina the leading States. North Carolina alone accounted for nearly 30 percent of the total value of shipments of crushed and broken granite. The 22.8 million tons of crushed and broken granite shipped in 1954 was more than three times as large as production in 1939.

The "Crushed and broken granite" industry represents establishments primarily engaged in mining or quarrying crushed and broken granite, including related rocks, such as gneiss, syenite, and diorite. Nepheline syenite operations are classified in the "Clay, ceramic, and refractory minerals, not elsewhere classified" industry.

CRUSHED AND BROKEN SLATE--The value of shipments of all quarries producing crushed and broken slate as the major product amounted to \$8,162 thousand in 1954. Principal expenses for these quarries included \$2,369 thousand for wages and salaries, \$2,045 thousand for supplies and minerals received for preparation, \$946 thousand for fuel and purchased electric energy, and \$124 thousand for contract work. The cost of purchased machinery installed was \$304 thousand. Employment at these operations averaged 533. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$312 thousand. The total horsepower of equipment available for use was 26 thousand. Water intake for use during the year, including mine water, was 119 million gallons.

Quarries producing crushed and broken slate either as the major product or as a secondary product were operated in 10 States in 1954 with Vermont and Virginia the two leading States. The 947 thousand tons of crushed and broken slate shipped in 1954 was three times as large as production in 1939.

The "Crushed and broken slate" industry represents establishments primarily engaged in mining or quarrying crushed and broken slate, including slate granules.

CRUSHED AND BROKEN MARBLE--The value of shipments of all quarries producing crushed and broken marble as the major product amounted to \$5,142 thousand in 1954. Principal expenses for crushed and broken marble quarries included \$1,369 thousand for wages and salaries, \$1,268 thousand for supplies and minerals received for preparation, \$203 thousand for fuel and purchased electric energy, and \$168 thousand for contract work. The cost of purchased machinery installed was \$196 thousand. Employment at these operations averaged 431. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$354 thousand. The total horsepower of equipment available for use was 13 thousand. Water intake for use during the year, including mine water, was 11 million gallons.

Quarries producing crushed and broken marble either as the major product or as a secondary product were operated in 13 States in 1954, with Georgia as the leading State. The 544 thousand tons of crushed and broken marble shipped in 1954 was about seven times as great as production in 1939.

The "Crushed and broken marble" industry represents establishments primarily engaged in mining or quarrying crushed and broken marble, including serpentine (verde antique), dolomitic marble, and onyx marble.

CRUSHED AND BROKEN TRAP ROCK--The value of shipments of all crushed and broken trap rock quarries in 1954 amounted to \$46,869 thousand. Of this total, shipments from quarries and plants classified in the crushed and broken trap rock industry were valued at \$45,471 thousand and shipments from quarries included in establishments classified in manufacturing and wholesale trade industries were valued at \$1,398 thousand. Principal expenses for quarries and plants in the crushed and broken trap rock industry included \$13,689 thousand for wages and salaries, \$7,600 thousand for supplies and minerals received for preparation, \$2,557 thousand for fuel and purchased electric energy, and \$987 thousand for contract work. The cost of purchased machinery installed was \$3,870 thousand. Employment at these operations averaged 2,986. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$3,670 thousand. The total horsepower of equipment available for use was 201 thousand. Water intake for use during the year, including mine water, was 1,099 million gallons.

Quarries producing crushed and broken trap rock either as the major product or as a secondary product were operated in 16 States in 1954, with New Jersey and Pennsylvania together accounting for almost one-half of the value of shipments of crushed and broken trap rock. The 23.6 million tons of crushed and broken trap rock shipped in 1954 was about two and one-third times as great as production in 1939.

The "Crushed and broken trap rock" industry represents establishments primarily engaged in mining or quarrying crushed and broken trap rock (basalt, diabase, gabbro, and related rocks).

CRUSHED AND BROKEN SANDSTONE--The value of shipments of all quarries producing crushed and broken sandstone as the major product amounted to \$31,190 thousand in 1954. Principal expenses for these quarries included \$7,054 thousand for wages and salaries, \$6,636 thousand for supplies and minerals received for preparation, \$1,432 thousand for fuel and purchased electric energy, and \$737 thousand for contract work. The cost of purchased machinery installed was \$4,186 thousand. Employment at these operations averaged 1,711. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$4,715 thousand. The total horsepower of equipment available for use was 109 thousand. Water intake for use during the year, including mine water, was 1,428 million gallons.

Quarries producing crushed and broken sandstone either as the major product or as a secondary product were operated in 28 States in 1954 with Wisconsin, West Virginia, and Pennsylvania the leading States. The 9.6 million tons of crushed and broken sandstone shipped in 1954 was more than three and one-half times as great as production in 1939.

The "Crushed and broken sandstone" industry represents establishments primarily engaged in mining or quarrying crushed and broken sandstone, including quartzite, and ganister.

CRUSHED AND BROKEN STONE, NOT ELSEWHERE CLASSIFIED--The value of shipments of all quarries producing miscellaneous crushed and broken stone in 1954 amounted to \$16,203 thousand. Of this total, shipments from quarries and plants classified in the crushed and broken stone, not elsewhere classified in dustry were valued at \$15,657 thousand and shipments from quarries included in establishments classified in manufacturing and wholesale trade industries were valued at \$546 thousand. Principal expenses for quarries and plants in the miscellaneous crushed and broken stone industry included \$3,502 thousand for wages and salaries, \$4,646 thousand for supplies, \$608 thousand for fuel and purchased electric energy, and \$604 thousand for contract work. The cost of purchased machinery installed was \$572 thousand. Employment at these operations averaged 882. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$823 thousand. The total horsepower of equipment available for use was 64 thousand. Water intake for use during the year, including mine water, was 443 million gallons.

Quarries producing miscellaneous crushed and broken stone either as the major product or as a secondary product were operated in 34 States in 1954. The two largest producing States were California and Arkansas. The 8.9 million tons of miscellaneous crushed and broken stone shipped in 1954 was two and one-quarter times as large as production in 1939.

The "Crushed and broken stone, not elsewhere classified" industry represents establishments primarily engaged in mining or quarrying crushed and broken stone, not elsewhere classified, such as various light colored volcanic rocks, mica schist, and mixed boulders.

GENERAL--These statistics are derived from preliminary tabulations of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census Bulletin, "Crushed and Broken Stone," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries. The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years.

| | (F | excludes es | tablishmen | ts for 195 | 4 with val | ue of product | tion and with |
|----------|-----------------------------------------------------------------------------------------------------|----------------|------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------|-------------------|
| | | | Crushed | and broke | n stone qu | arries, total | L |
| | | | 19 | 54 | | | |
| Line no. | Item | Total | Quarrand plus classi in truste brok sto indust | ies inc ants est fied he cla d and in tur he wh ries | arries luded in ablish- ments ssified manufac- ing and olesale trade ustries ¹ | 1939 ² | 1929 ² |
| 1 | Value of shipments, total ⁴ \$1,000 | 4484.1 | 01 46 | 5,254 | 418,847 | 101,581 | 130,659 |
| 2 | Primary products of the quarrydo | 4454.5 | | 5,671 | 418,847 | 100,065 | (NA) |
| 3 | Other products and servicesdo | 29,5 | | 9,583 | ···· | 1,516 | (NA) |
| 4 | Value added in quarrying and mineral preparation ⁵ do | (N | IA) 33 | 7,606 | (NA) | 75,884 | (NA) |
| 5 | Number of employees, total ⁶ | (N | IA) 3 | 7,195 | (NA) | 33,707 | (NA) |
| 6 7 | Production and development Workers | | | 3,124 4,071 | (NA) (NA) | 30,937 2,770 | 34,184 (NA) |
| 8 | Man-hours worked by production and development workers1,000 | 88,1 | 36 7 | 5,559 | 12,577 | 62,366 | (NA) |
| 9 | Principal expenses, total\$1,000 | (N | IA) 27 | 1,493 | (NA) | 63,352 | (NA) |
| 10 | Wages of production and development workersdo | 145,9 | | 2,499 | 23,416 (NA) | 31,491 | 41,839 (NA) |
| 11 12 | Salaries of all other employeesdododo | ון | | 1,103 9,328] | (NA) | 6,164 | 24,28 8 |
| 13 | Fueldo | 149,7 | 702] 1 | 6,050 | 21,812 | 4,309 | 4,055 |
| 14 15 | Purchased electric energydododododododo. | | | 1,828 | | 4,867 | 5,428 (NA) |
| 16 | Purchased machinery installeddo | (N | | 4,791 | (NA) | (NA) | (NA) |
| 17 | Capital expenditures (development work, construction, machinery, and equipment)do | (N | IA) 4. | 5,034 | (NA) | (NA) | (NA) |
| 18 | For machinery and equipment onlydo | (N | (A) 3: | 1,640 | (NA) | 5,045 | (NA) |
| 19 | Horsepower rating of power equipment ⁸ 1,000 | (N. | (A) | 2,762 | (NA) | 961 | 607 |
| 20 | Water intake9 | (N | (A) 5 | 9,930 | (NA) | (NA) | (NA) |
| | | | ed and brol | | | shed and brok arble industr | |
| | | STR | te industr | 1 | ш | arbie industr | T: |
| | | | | | | | |
| | | | | , | | | |
| | | 1954 | 1939 | 1929 | 1954 | 1939 | 1929 |
| | | | | | | | |
| 0.7 | Value of shipments, total ⁴ | 0.360 | 0.720 | 7.00 | (5.1 | 10 397 | (77) |
| 21 22 | Primary products of the quarry | 8,162 8,162 | 2,137 2,137 | 1,020 (NA | | | |
| 23 | Other products and servicesdodo | 0,102 | ١٠٠٠ | (NA | | 97 27 | |
| 24 | Value added in quarrying and mineral preparation5do | 5,055 | 1,236 | (NA |) 3,6 | 61 152 | (NA) |
| 25 | Number of employees, total ⁶ | 533 | 450 | (NA |) 4 | 31 79 | (NA) |
| 26 27 | Production and development workers | 464 69 | 407 43 | 21 (NA | | 79 70 52 9 | |
| 28 | Man-hours worked by production and development workers1,000 | 1,198 | 803 | (NA |) 7 | 96 127 | (NA) |
| 29 | Principal expenses, total\$1,000 | 5,484 | 1,420 | (NA |) 3,0 | 08 99 | (NA) |
| 30 | Wages of production and development workersdo | 1,949 | 426 | 20 | 9 1,1 | 20 44 | 162 |
| 31 32 | Salaries of all other employeesdo Supplies and minerals received for preparation ⁷ do | 420 2,045 | 93 716 | (NA 12 | | 49 30 68 11 | |
| 33 | Fueldo | 610 | 39 | 2 | 1 | 86 6 | 5 |
| 34 35 | Purchased electric energydo Contract workdo | 336 124 | 138 8 | 5 (NA | | 17 8 68 | (204.) |
| 36 | Purchased machinery installeddo | 304 | (NA) | (NA | | 96 (NA) | |
| 37 | Capital expenditures (development work, construction, | JU4 | (MA) | (NA | ´ | (IA) | (NA) |
| | machinery, and equipment)do | 312 | (NA) | (NA |) 3 | 54 (NA) | (NA) |
| 38 | For machinery and equipment onlydo | 277 | 24 | (NA |) 1 | 80 2 | (NA) |
| 39 | Horsepower rating of power equipment81,000 | 26 | 13 | : | 5 | 13 2 | 2 |
| 40 | Water intake ⁹ | 119 | (NA) | (NA |) | 11 (NA) | (NA) |

NA Not available.

Represents (a) quarries producing crushed and broken stone primarily for use in a plant at the same location manufacturing hydraulic cement, quicklime, or hydrated lime; and (b) quarries producing and shipping crushed and broken stone as a secondary product at establishments where the primary product is bituminous concrete or ready-mixed concrete.

Includes statistics for limestone and cement rock quarried by cement manufacturers and for limestone quarried by producers of lime.

Represents quarries described in footnote 1, part (b).

*figures for 1954 which represent shipments, exclude the value of limestone produced and consumed in the same establishment in cement and lime manufacture. Figures for 1939 and 1929 represent value of production and services and include such stone. The value of such stone in 1954 was approximately \$100 million; in 1939, under \$22 million; and in 1929, approximately \$23 million.

Page 4 of 12

nditures less than \$500; and for 1939 and 1929, less than \$2,500)

| expenditures less than \$500; and for 1939 and 1929, less than \$2, | | | | | | \$2,500) | Crushed and broken granite quarries | | | | | | | | |
|---------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------|-------------------|-----------------|-------------------------------------|---------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|----------------|---------------|-------------|
| | | | oken 1 | Limestone | quarries | | | | | and broken g | ranite | quarri | es | | _ |
| Total | Quarrie and plan classifi in the crushed broker limesto industr | es in the est of the color of t | Quarri nclude stabli ment lassif n manu uring wholes trad ndustr | ed in sh- ss ied ufac- and sale | 1939 ² | 1929 | 92 | Total | Quarries and plans classific in the crushed a broken granite industr | ts establi ed ment classif in manu turing wholes | d in sh- sied fac- and ale | 193 | 9 | 1929 | Line no. |
| 4345,305 | 328 | 3,757 | 41 | .6,548 | 77,14 | 7 97 | 7,940 | 31,230 | 30, | ,875 | 355 | | 7,030 | 6,751 | 1 |
| ⁴ 327,393 17,912 | | 7,912 | 41 | .6,548 | 76,065 1,082 | | (NA) (NA) | 30,371 859 | 30, | ,016 859 | 355 | 6 | 5,891 139 | (NA) (NA) | 2 3 |
| (NA) | | 9,598 | | (NA) | 57,959 | 1 | (NA) | (NA) | 22, | ,201 | (NA) | | 5,042 | (NA) | 4 |
| (NA) | 1 | 3,123 | | (NA) | 26,512 | | (NA) | (NA) | 1 | ,529 | (NA) | | 2,332 | (NA) | 5 |
| (NA) (NA) | | ,925 3,198 | | (NA) (NA) | 24,482 2,031 | | (NA) | (NA) (NA) | 2, | ,344 185 | (NA) (NA) | 2 | 2,100 | 2,066 (NA) | 6 7 |
| 68,664 | | ,335 | 1 | 2,329 | 48,90 | | (NA) | 5,655 | | 607 | 48 | | 4,574 | (NA) | 8 |
| (NA) 113,587 | | 5,424 0,715 | 2 | (NA) 2,872 | 48,544 24,903 | | (NA) 2,067 | (NA) 7,679 | | 525 | (NA) | | 4,343 1,782 | (NA) 2,162 | 9 |
| (NA) | 16 | 5,199 0,627 | ~ | (NA) | 4,453 | 3 | (NA) 3,876 | (NA) | 1, | 132 | (NA) | | 573 1,405 | (NA) 1,273 | 11 12 |
| 109,800 |]] 11 | ,913 | 2 | 1,290 | 3,404 | : 3 | ,001 | 8,993 | { | 747 838 | 173 | {] | 223 | 209 | 13 |
|] | 1 6 7 | ,336 J | | | 675 | 5 | (NA). | , , | Į į | 729 J | | l | 26 | (NA) | 15 |
| NA) | 32 | ,622 | | (NA) | (NA) | | (NA) | (NA) | 3, | 041 | (NA) | | (NA) | (NA) | 16 |
| (NA) | | ,973 | | (NA) | (NA) | | (NA) | (NA) | | 187 | (NA) | | (NA) | (NA) | 17 |
| (NA) (NA) | 4 | ,012 | | (NA) (NA) | 4,141 756 | | (NA) 461 | (NA) (NA) | 1 | 330 176 | (NA) (NA) | | 260 48 | (NA) 38 | 18 19 |
| (NA) | | ,610 | | (NA) | (NA) | 1 | (NA) | (NA) | | 220 | (NA) | | (NA) | (NA) | 20 |
| Crus | hed and br | oken tra | ap roc | k quarrie | s | | ned and b | | Crus | hed and brok | en stone | e, n.e. | .c., quar | ries | |
| | 1954 | | | | 1 | | | T | | 1954 | | | | | |
| Total a | Quarries nd plants lassified in the crushed nd broken trap rock industry | Quarri include establi ment classif in manu turing wholes trad industr | ed in ish- ts Tied ifac- and sale | 1939 | 1929 | 1954 | 1939 | 1929 | Total | Quarries and plants classified in the crushed and broken stone, n.e.c., industry | establ mer classi in mar turing whole | ded in lish- nts ified nufac- g and esale ade | 1939 | 1929 | |
| 46,869 | 45,471 | | 1,398 | 9,632 | 14,799 | 31,190 | 2,930 | 2,718 | 16,203 | 15,657 | | 546 | 2,528 | 6,954 | 21 |
| 40,372 6,497 | 38,974 6,497 | 1 | L,398 | 9,569 63 | (NA) (NA) | 28,300 2,890 | 2,873 57 | | 15,375 828 | 14,829 828 | | 546 | 2,380 148 | | 22 23 |
| (NA) | 34,127 | | (NA) | 7,340 | (NA) | 22,914 | 2,160 | | (NA) | 10,050 | | (NA) | 1,995 | | 24 |
| (NA) | 2,986 | | (NA) | 2,164 | (NA) | 1,711 | 1,232 | | (NA) | 882 | | (NA) | 937 | (NA) | 25 |
| (NA) (NA) | 2,680 306 | | (NA) (NA) | 1,886 278 | 2,877 (NA) | 1,529 182 | 1,134 98 | (NA) | (NA) (NA) | 803 79 | | (NA) (NA) | 858 79 | (NA) | 26 27 |
| 6,834 | 6,659 | | 175 | 4,001 | (NA) | 3,283 | 1,990 | 1 | 1,706 | 1,681 | | 25 | 1,970 | | 28 |
| (NA) 12,500 | 24,833 12,089 | | (NA) 411 | 5,395 2,452 | (NA) 4,247 | 15,859 5,970 | 2,028 1,084 | | (NA) 3,110 | 9,360 3,083 | | (NA) 27 | 1,523 800 | | 29 30 |
| (NA) | 1,600 7,600 | ı | (NA) | 651 (1,344 | (NA) 2,104 | 1,084 6,636 | 174 5 1 9 | (NA) | (NA) | 419 4,646 | 1 | (NA) | 190 314 | | 31 32 |
| 11,318 | 1,409 | } | 174 | 413 503 | 372 618 | 890 542 | 123 105 | 70 | 6,033 | 395 213 | } | 175 | 101 95 | 145 219 | 33 34 |
| (NA) | 3,870 | J | (NA) | (NA) | (NA) (NA) | 737 4,186 | 23 (NA) | (NA) | (NA) | L 604 | | (NA) | (NA) | (NA) (NA) | 35 36 |
| | | | | | | | | | | | | | | | |
| (NA) (NA) | 3,670 2,425 | | (NA) (NA) | (NA) 384 | (NA) (NA) | 4,715 2,927 | (NA) 69 | 1 | (NA) (NA) | 823 489 | | (NA) (NA) | (NA) 165 | (NA) (NA) | 37 38 |
| (NA) | 201 | | (NA) | 96 | 61 | 109 | 25 | | | 64 | | (NA) | 21 | | 39 |
| (NA) | 1,099 | | (NA) | (NA) | (NA) | 1,428 | (NA) | (NA) | (NA) | 443 | | (NA) | (NA) | (NA) | 40 |

⁵For 1954, represents value of products shipped plus capital expenditures less cost of supplies, minerals received for preparation, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "Value added" represents the value added during the year for each group of quarries and plants by mining and preparing the primary products of these industries, producing other products, performing services for others, and, for 1954, in development of mineral properties.

6Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

7Figures for 1939 and 1929 exclude the cost of minerals received for preparation. The cost of minerals received for preparation in 1954 by quarries and plants classified in the crushed and broken stone industries amounted to \$2,436 thousand.

6Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased electric energy.

7Represents total water intake from publicly and privately owned systems, and mine water used for mineral preparation. Page 5 of 12

| | | ed and broken 000 short to | | | Product developmen | ion and t workers | Cost of supplies, |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------|-------------------------------|---------------------------------------|-------------------------------------------|--------------------------------------------------|----------------------------------|-------------------------------------------------------------------------|
| Division and State | Produced an at the establishme manufact | same | Net shipments and interplant | Value of shipments ² (\$1,000) | Man-hours worked | Wages (\$1,000) | minerals received for preparation, fuel, purchased electric energy, and |
| | Hydraulic cement | Lime | transfers1 | | (1,000) | (#1,000) | contract work (\$1,000) |
| United States ³ , total | 59,150 | 10,839 | 294,096 | 484,101 | 88,136 | 145,915 | 149,703 |
| Quarries and plants classified in the crushed and broken stone industries | | | 282,720 | 465,254 | ⁴ 75,559 | 122,499 | 127,891 |
| Quarries included in establishments classified in | | | 0.170 | | 54 000 | 14 220 | |
| Hydraulic cement industry Lime industry Other industries ⁶ | 59,150 | 10,839 | 2,479 5,791 3,106 | 3,177 11,378 4,292 | ⁵ 8,303 ⁵ 3,375 5899 | 16,112 5,743 1,561 | 15,150 5,188 1,474 |
| New England Maine Vermont | (D) | (D) (D) | 517 486 | 1,137 4,544 | 440 539 | 714 1,026 | 315 1,638 |
| Massachusetts, total | | 246 | 3,243 | 5,464 | 898 | 1,708 | 1,446 |
| Quarries and plants classified in the crushed | | | | | | | |
| and broken stone industries Other quarries 7 | ::: | 246 | 2,481 762 | 3,890 1,574 | 703 195 | 1,293 415 | 1,109 337 |
| Connecticut New Hampshire and Rhode Island | | (D) | 2,765 146 | 4,915 382 | 694 84 | 1,138 134 | 1,267 173 |
| Middle Atlantic New York, total | 2,723 | (D) | 17,762 | 28,214 | 4,920 | 9,970 | 6,520 |
| Quarries and plants classified in the crushed and broken stone industries | 2,723 | (D) | 17,398 364 | 27,638 576 | 4,393 527 | 9,004 966 | 5,484 1,036 |
| New Jersey | ••• | | 7,115 | 21,414 | 2,667 | 4,601 | 4,348 |
| Pennsylvania, total | 10,568 | 1,848 | 28,220 | 54,039 | 11,368 | 19,310 | 17,365 |
| Quarries and plants classified in the crushed and broken stone industries Other quarries ⁷ | 10,568 | 1,848 | 25,051 3,169 | 48,255 5,784 | 8,654 2,714 | 14,197 5,113 | 13,194 4,171 |
| East North Central Ohio, total | 3,116 | 3,325 | 25,721 | 37,938 | 7,088 | 12,939 | 10,732 |
| Quarries and plants classified in the crushed and broken stone industries Other quarries 7 | 3,126 | 3,325 | 23,777 1,944 | 35,664 2,274 | 5,943 1,145 | 10,652 2,287 | 9,026 1,706 |
| IndianaIlinoisMichigan | 1,721 2,522 904 | (D) | 9,032 22,581 16,850 | 12,189 36,137 21,554 | 2,383 5,388 3,041 | 3,564 9,517 6,443 | 4,244 8,380 6,498 |
| Wisconsin | ••• | (D) | 8,404 | 22,557 | 2,560 | 4,597 | 6,607 |
| West North Central Minnesota Iowa | 2,720 | | 2,813 12,136 | 3,878 17,263 | 820 2 , 968 | 1,330 4,492 | 1,385 6,683 |
| Missouri, total | 2,755 | 2,062 | 12,562 | 18,076 | 4,283 | 6,892 | 6,059 |
| Quarries and plants classified in the crushed and broken stone industries Other quarries 7. | 2,755 | 2,062 | 11,759 803 | 16,535 1,541 | 3,301 982 | 5,031 1,861 | 4,505 1,554 |
| South Dakota Nebraska. Kansas. | (D) 2,475 | (D) | 1,351 1,845 7,796 | 2,726 3,400 10,142 | 448 790 1,831 | 713 1,348 2,982 | 1,307 1,463 4,009 |
| South Atlantic Maryland | (D) | (D) | 4,100 | 8,434 | 1,189 | 1,843 | 2,370 |
| Virginia, total | (D) | 725 | 8,240 | 13,743 | 3,611 | 4,632 | 4,815 |
| Quarries and plants classified in the crushed and broken stone industries | (D) | 725 | 7 , 975 265 | 12,940 803 | 3,043 568 | 3 , 673 | 4,012 803 |
| West Virginia | (D) | (D) | 7,971 | 12,959 | 2,327 | 4,010 | 3,812 |
| North Carolina. Georgia. Florida. Delaware and South Carolina. | (D) (D) (D) | (D) | 8,929 5,164 11,239 2,750 | 12,963 13,618 15,194 4,426 | 2,267 2,495 2,798 1,060 | 2,708 3,039 3,650 1,168 | 3,560 4,709 4,439 1.509 |
| See footnotes at end of table. | , | | | | | | Page 6 of 1 |

| | | d and broken 000 short to | | | Product developmen | ion and t workers | Cost of supplies, minerals | |
|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------|------------------------------|---------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------------------------------------------|--|
| Division and State | Produced ar at the establishme manufact | same | Net shipments | Value of shipments ² (\$1,000) | Man-hours | Wages | received for preparation, fuel, purchased electric | |
| | Hydraulic cement | Lime | interplant transfers ¹ | | (1,000) | (\$1,000) | energy, and contract work (\$1,000) | |
| East South Central Kentucky Tennessee Alabama and Mississippi | 2,111 3,005 | (D) 433 | 10,604 9,770 4,139 | 14,417 13,099 7,203 | 2,867 3,057 2,011 | 4,464 4,021 2, 418 | 3,421 4,164 3,314 | |
| West South Central Arkansas | (D) | (D) | 3,108 | 9,139 | 1,099 | 1,592 | 3,305 | |
| Texas, total | 4,814 | 486 | 7,056 | 9,964 | 2,380 | 3,515 | 4,961 | |
| Quarries and plants classified in the crushed and broken stone industries Other quarries ⁷ | 4,814 | ••• 486 | 6,634 422 | 9,483 481 | 1,662 718 | 2,294 1,221 | 3,505 1,456 | |
| Louisiana and Oklahoma | 1,706 | | 6,523 | 6,501 | 1,693 | 2,382 | 1,892 | |
| Mountain Montana. Idaho. Wyoming. Colorado. Utah Nevada. New Mexico and Arizona. | (D) (D) (D) (D) (D) | (D) (D) (D) (D) | 1,703 790 927 432 768 1,412 794 | 1,399 1,227 1,213 1,231 1,003 1,484 638 | 178 166 261 195 240 244 265 | 389 378 528 338 453 500 496 | 820 565 484 417 294 380 292 | |
| Pacific WashingtonOregon | 1,037 (D) | (D) | 2,762 2,483 | 4,217 3,204 | 763 470 | 1,844 1,071 | 1,634 796 | |
| California, total | 7,222 | 339 | 11,087 | 20,856 | 3,290 | 7,058 | 7,311 | |
| Quarries and plants classified in the crushed and broken stone industries Other quarries ⁷ | 7,323 | 339 | 10,797 290 | 19,784 1,072 | 2,329 961 | 4,987 2,071 | 4,856 2,455 | |
| Hawaii ³ | | | 784 | 1,503 | 319 | 514 | 328 | |

D Withheld to avoid approximately disclosing figures of individual companies.

D Withheld to avoid approximately disclosing figures of individual companies.

'Represents shipments and interplant transfers less stone received from other establishments for preparation.

'For quarries classified in the crushed and broken stone industries, represents the value of shipments of crushed and broken stone and the value of secondary products and services. For quarries included in establishments classified in other industries, represents only the value of crushed and broken stone shipped.

'Statistics for Hawaii are not included in the United States totals.

'Represents man-hours at quarries and associated preparation plants.

'Represents man-hours at quarries only.

'See table 1, footnote 3.

'See table 1, footnote 1.

| (Includes only quarries | | | | | | | |
|-------------------------|-------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------|----------------|---------------------------------------------|---------------------|----------------------------------------------------------------|
| | | | Value | Numb | er of employe | es³ | Man hauma |
| Line no. | Industry, Division, and State | Value of shipments1 (\$1,000) | added in quarrying and mineral preparation ² (\$1,000) | Total | Production and development workers | All other employees | Man-hours worked by production and development workers (1,000) |
| | CRUSHED AND BROKEN LIMESTONE INDUSTRY | | | | | | |
| 1 | United States, total | 328,757 | 239,603 | 28,123 | 24,925 | 3,198 | 56,335 |
| 2 | New England (Maine, Yermont, Massachusetts, Rhode Island, and Connecticut) | 1,169 | 735 | 130 | 109 | 21 | 256 |
| | Middle Atlantic | 07.05 | 000 0000 | 2 550 | | | |
| 3 4 | Pennsylvania New York and New Jersey | 37,357 24,839 | 27,077 19,164 | 3,558 1,725 | 3,122 1,539 | 436 186 | 6,506 3,825 |
| 5 | East North Central Ohio. | 33,603 | 26,056 | 2,861 | 2,469 | 392 | 5,695 |
| 6 | Indiana | 12,103 | 8,495 | 1,082 | 960 | 122 | 2,168 |
| 7 | Illinois | 35,728 | 27,396 | 2,380 | 2,171 | 209 145 | 4,977 |
| 9 | Michigan Wisconsin. | 21,506 8,767 | 16,030 5,949 | 1,446 864 | 1,301 777 | 87 | 2,937 1,808 |
| 10 | West North Central Iowa | 17,044 | 11,266 | 1,266 | 1,110 | 156 | 2,641 |
| 11 | Missouri | 16,322 | 12,565 | 1,779 | 1,510 | 269 | 3,288 |
| 12 | South Dakota | 1,010 | 682 | 111 | 103 | 8 | 224 |
| 13 14 | Kansas. Minnesota and Nebraska. | 9,492 6,580 | 6,197 4,481 | 761 656 | 627 599 | 134 57 | 1,406 1,390 |
| 15 | South Atlantic Maryland | 5,611 | 3,807 | 310 | 279 | 31 | 699 |
| 16 | Virginia | 8,561 | 6,056 | 1,036 | 936 | 100 | 2,080 |
| 17 | West Virginia | 8,824 | 6,538 | 910 | 807 | 103 | 1,630 |
| 18 19 | North Carolina | 2,630 14,805 | 2,044 10,469 | 214 1,119 | 207 999 | 7 120 | 418 2,607 |
| 20 | South Carolina and Georgia | 2,903 | 2,189 | 263 | 246 | 17 | 558 |
| 21 22 | East South Central Tennessee Kentucky, Alabama, and Mississippi | 12,657 21,029 | 8,657 14,982 | 1,243 2,190 | 1,110 1,973 | 133 217 | 2,481 4,230 |
| 00 | West South Central | 50/ | 551 | 101 | da | 18 | 160 |
| 23 24 | ArkansasOklahoma | 794 5 , 975 | 574 : 4,505 | 101 621 | 83 561 | 60 | 160 1,437 |
| 25 | Texas | 8,399 | 5,428 | 693 | 625 | 68 | 1,502 |
| 26 | Mountain Colorado | 1,127 | 844 | 75 | 71 | 4 | 126 |
| 27 | Utah | 889 | 702 | 117 | 81 | 36 | 175 |
| 28 29 | Montans, Idaho, and Wyoming New Mexico, Arizona, and Nevada | 1,311 1,059 | 803 858 | 117 59 | 103 49 | 14 10 | 207 104 |
| 20 | Pacific | 022 | 1100 | 677 | (1) | 6 | 111 |
| 30 31 | WashingtonOregon | 933 282 | 723 223 | 67 26 | 61 26 | ••• | 49 |
| 32 | California | 5,448 | 4,109 | 343 | 311 | 32 | 640 |
| | CRUSHED AND BROKEN GRANITE INDUSTRY | | | | | | |
| 33 | United States, total | 30,875 | 22,201 | 2,529 | 2,344 | 185 | 5,607 |
| 34 35 | New England Massachusetts Maine, Rhode Island, and Connecticut | 1,089 434 | 688 368 | 84 54 | 69 52 | 15 2 | 157 123 |
| 36 | Middle Atlantic (New Jersey) | 1,177 | 1,065 | 44 | 44 | ••• | 124 |
| 37 | North Central (Michigan, Wisconsin, Minnesota, and Missouri) | 839 | 283 | 45 | 38 | 7 | 90 |
| | South | | | | | | |
| 38 | Virginia | 2,130 | 1,452 | 195 703 | 187 666 | 8 37 | 1,696 |
| 39 40 | North Carolina | 9,170 3,168 | 6,432 2,167 | 299 | 287 | 12 | 724 |
| 41 | Georgia | 6,049 | 4,201 | 507 | 457 | 50 | 1,068 |
| 42 | Delaware, Maryland, Tennessee, and Arkansas | 2,471 | 2,010 | 266 | 257 | 9 | 608 |
| 43 | Mountain (Montana, Wyoming, Arizona, and Nevada) | 808 | 619 | 59 | 59 | ••• | 105 |
| 44 | Pacific California | 3,361 | 2,823 | 253 | 209 | 44 | 445 |
| 45 | Washington and Oregon | 179 | 93 | 20 | 19 | 1 | 26 |
| See f | ootnotes at end of table. | | | | | | |

classified in the mineral industries)

| Classified | | | expenses (| \$1,000) | | | | | penditures 000) | | | |
|----------------------------------------------------|--------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|--------------------------------------------------|--------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------|----------------------------------|
| Total | Wages of production and develop- ment workers | Salaries of all other employees | Supplies and minerals received for prepara- tion | Fuel | Purchased electric energy | Contract work | Purchased machinery installed (\$1,000) | Develop- ment work, construc- tion, machinery, and equipment | For machinery and equipment only | Horsepower rating of power equipment ⁵ (1,000) | Water intake ⁶ (mil'ion gallons) | Line no. |
| 195,424 | 90,715 | 16,199 | 60,627 | 11,913 | 8,634 | 7,336 | 32,622 | 31,973 | 23,012 | 2,173 | 53,610 | 1 |
| 953 | 361 | 119 | 299 | 40 | 58 | 76 | 118 | 157 | 106 | 11 | 28 | 2 |
| 23,243 13,578 | 10,914 7,606 | 2,445 1,014 | 6,636 3,458 | 1,053 629 | 1,268 760 | 927 111 | 3,674 2,599 | 3,278 1,882 | 2,212 1,174 | 265 119 | 19,904 2,399 | 3 |
| 20,836 7,572 17,784 12,830 6,122 | 10,213 3,243 8,669 6,246 3,080 | 2,220 604 1,270 976 367 | 6,073 2,432 5,135 4,400 1,555 | 905 520 989 645 583 | 1,188 453 708 305 139 | 237 320 1,013 258 398 | 3,129 1,281 2,563 830 1,152 | 3,984 1,398 2,076 962 1,009 | 2,519 1,151 1,350 539 799 | 195 93 166 109 118 | 1,790 1,770 614 8,972 114 | 5 6 7 8 9 |
| 10,295 10,583 924 6,111 4,638 | 3,861 5,009 345 2,271 2,289 | 662 1,135 48 606 296 | 4,282 2,912 4455 2,133 1,257 | 1,021 1,003 53 397 569 | 157 232 23 174 85 | 312 292 (4) 530 142 | 1,959 2,009 284 930 1,099 | 1,953 2,691 487 869 1,053 | 1,726 1,703 277 841 967 | 150 140 7 93 86 | 512 24 32 287 112 | 10 11 12 13 14 |
| 2,887 5,423 5,604 1,142 7,891 1,854 | 1,033 2,566 2,621 525 3,306 641 | 182 422 550 43 586 97 | 41,429 1,622 1,677 4459 2,115 | 170 344 186 62 501 101 | 73 444 341 53 369 89 | (4) 25 229 (4) 1,014 (4) | 487 118 | 368 979 634 106 1,974 513 | 230 828 342 95 1,682 82 | 16 77 56 14 69 13 | 1 411 969 388 9,582 147 | 15 16 17 18 19 20 |
| 7,070 12,713 | 3,049 5,904 | 618 946 | 2,215 3,878 | 603 787 | 319 816 | 266 382 | 1,953 1,744 | 1,356 1,559 | 1,206 1,296 | 100 143 | 4,388 694 | 21 22 |
| 401 3,576 5,298 | 222 1,951 2,041 | 54 208 332 | 72 41,033 2,288 | 24 186 300 | 26 198 164 | 3 (4) 173 | 162 820 672 | 67 767 622 | 67 554 559 | 7 30 46 | 110 66 161 | 23 24 25 |
| 527 621 946 447 | 214 319 400 209 | 30 95 48 37 | ⁴ 252 144 226 ⁴ 171 | 14 32 23 23 | 17 31 28 7 | (4) 221 (4) | 31 15 50 (D) | 31 35 40 (D) | 31 15 40 (D) | 7 10 9 4 | 2 4 22 | 26 27 28 29 |
| 460 167 2,928 | 232 109 1,266 | 17 172 | 164 ⁴ 47 1,153 | 29 7 114 | 18 4 87 | (4) 136 | 28 (D) 534 | 29 (D) 685 | 27 (D) 502 | 2 1 17 | 24 | 30 31 32 |
| 17,525 | 7,573 | 1,132 | 6,506 | 747 | 838 | 729 | 3,041 | 3,187 | 2,330 | 176 | 3,220 | 33 |
| 698 345 | 311 210 | 67 6 | ⁴ 255 ⁴ 105 | 22 18 | 43 6 | (4) (4) | 280 62 | 199 125 | 161 87 | 9 | 13 2 | 34 35 |
| 382 | 271 | | 59 | 24 | 28 | | 5 | 4 | (D) | 11 | 5 | 36 |
| 760 | 160 | 45 | ⁴ 519 | 12 | 24 | (4) | (D) | (D) | (D) | 4 | 84 | 37 |
| 1,240 4,882 1,835 3,684 1,439 | 475 1,995 716 1,305 864 | 42 295 54 349 44 | 4572 2,131 4830 41,740 4406 | 73 170 102 137 69 | 78 224 133 153 56 | (4) 67 (4) (4) (4) | 184 873 191 764 373 | 229 727 255 946 443 | 205 679 110 752 111 | 15 40 20 25 15 | 439 1,098 533 754 203 | 38 39 40 41 42 |
| 445 | 256 | | 4135 | 31 | 23 | (4) | 48 | 48 | 48 | 12 | | 43 |
| 1,681 | 966 44 | 226 4 | 290 480 | 86 3 | 67 | 46 (⁴) | 242 (D) | 193 (D) | 157 (D) | 21 1 | 89 | 44 45 |

(Includes only quarries and plants

| _ | | i | , | | ies and plants | | | |
|----------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------|-------------------|---------------------------------------------|------------------------------|----------------------------------------------------------------|--|
| | | | | Numb | er of employe | er of employees ³ | | |
| Line no. | Industry, Division, and State | Value of shipments (\$1,000) | Value added in quarrying and mineral preparation ² (\$1,000) | Total | Production and development workers | All other employees | Man-hours worked by production and development workers (1,000) | |
| | CRUSHED AND BROKEN MARBLE INDUSTRY | | | | | | | |
| 1 | United States, total | 5,142 | 3,661 | 431 | 379 | 52 | 796 | |
| 2 | East and South (New York, New Jersey, Maryland, Virginia, Georgia, Tennessee, and Texas) | 4,801 341 | 3,377 284 | 3 7 6 : | 330 49 | 46 6 | 709 87 | |
| | CRUSHED AND BROKEN TRAP ROCK INDUSTRY | | | | | | | |
| 4 | United States, total | 45,471 | 34,127 | 2,986 | 2,680 | 306 | 6,659 | |
| 5 | New England Massachusetts Connecticut | 2,269 3,798 | 1,676 3,151 | 171 256 | 1 <i>5</i> 4 220 | 17 36 | 383 567 | |
| 7 8 9 | Middle Atlantic New York New Jersey. Pennsylvania | 3,618 18,024 6,409 | 2,797 14,093 4,196 | 234 896 553 | 218 784 496 | 16 112 57 | 575 2,236 1,286 | |
| 10 11 | East North Central and South Maryland Wisconsin, Virginia, and Texas | 1,510 2,482 | 1,244 1,665 | 87 177 | 81 158 | 6 19 | 175 359 | |
| 12 | Mountain (Montana, Idaho, and Nevada) | 1,287 | 839 | 75 | 73 | 2 | 154 | |
| 13 14 15 | Pacific Washington Oregon California. | 2,166 2,126 1,782 | 1,545 1,583 1,338 | 200 181 156 | 183 169 144 | 17 12 12 | 307 318 299 | |
| | CRUSHED AND BROKEN SANDSTONE INDUSTRY | | | | | | | |
| 16 | United States, total | 31,190 | 22,913 | 1,711 | 1,529 | 182 | 3,283 | |
| 17 | New England (Maine) | 570 | 505 | 90 | 89 | 1 | 184 | |
| 18 19 | New York | 717 3,264 | 514 2,321 | 63 367 | 55 328 | 8 39 | 150 593 | |
| 20 21 22 | North Central Ohio. South Dakota Illinois, Wisconsin, Missouri, and Kansas | 2,061 1,716 12,610 | 1,442 809 9,537 | 129 92 395 | 111 85 · 330 | 18 7 65 | 245 222 655 | |
| 23 24 | South Atlantic (Virginia, West Virginia, and Georgia) South Central (Kentucky, Tennessee, Alabama, | 4,906 | 3,686 | 201 | 185 | 16 | 480 | |
| 2.4 | Arkansas, and Texas) | 700 | 507 | - 88 | 85 | 3 | 164 | |
| 25 26 | West California Montana, Idaho, Wyoming, Colorado, New Mexico, | 3,611 1,035 | 2,998 594 | 210 | 187 74 | 23 | 416 174 | |
| | Utah, and Oregon | 1,039 | 794 | /6 | 74 | 2 | 1/4 | |
| 27 | United States, total | 15,657 | 10,050 | 882 | 803 | 79 | 1,681 | |
| 28 | East (Maine, Massachusetts, Rhode Island, New York, | | | | | | | |
| 29 | Pennsylvania, Ohio, Indiana, Illinois, Wisconsin, Iowa, Missouri, and Kansas) South Atlantic (Virginia, West Virginia, North | 1,261 | 838 I | 149 | 142 | 7 | 323 | |
| 30 | Carolina, South Carolina, and Florida) South Central (Tennessee, Arkansas, Oklahoma, and | 1,355 | 1,060 | 102 | 95 | 7 | 199 | |
| 31 | Texas) Mountain (Montan, Idaho, Wyoming, Colorado, Arizona, Utah, and Nevada) | 6,481 479 | 3,823 190 | 227 66 | 202 62 | 25 4 | 454 93 | |
| 32 33 | Pacific California Washington and Oregon. | 5,408 673 | 3,586 553 | 278 60 | 244 58 | 34 | 499 113 | |

D Withheld to avoid approximately disclosing figures of individual companies.

1Represents the value of crushed and broken stone and the value of secondary products and services.

2See table 1, footnote 5.

3See table 1, footnote 6.

classified in the mineral industries)

| | | Principal | expenses (| \$1,000) | | | | Capital ex | penditures 00) | | | |
|-------------------------|--------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------|------------------|---------------------------------|-------------------------------|--------------------------------------------------|--------------------------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------|----------------|
| Total | Wages of production and develop- ment workers | Salaries of all other employees | Supplies and minerals received for prepara- tion | Fuel | Purchased electric energy | Contract work | Purchased machinery installed (\$1,000) | Develop- ment work, construc- tion, machinery, and equipment | For machinery and equipment only | Horsepower rating of power equipment ⁵ (1,000) | Water intake ⁶ (million gallons) | Line no. |
| 3,008 | 1,120 | 249 | 1,268 | 86 | 117 | 168 | 196 | 354 | 180 | 13 | 11 | 1 |
| 2,746 262 | 9 50 170 | 230 19 | 41,375 461 | 78 8 | 113 4 | (4) (4) | 187 9 | 329 25 | 172 8 | 10 3 | 11 | 2 3 |
| 24,833 | 12,089 | 1,600 | 7,600 | 1,409 | 1,148 | 987 | 3,870 | 3,670 | 2,425 | 201 | 1,099 | 4 |
| 1,403 2,136 | 702 945 | 95 176 | 392 584 | 47 92 | 108 126 | 59 213 | 340 99 | 353 467 | 341 91 | 14 19 | 57 99 | 5 |
| 2,182 8,142 4,261 | 1,350 3,816 1,982 | 121 596 314 | 4496 2,550 1,507 | 62 458 206 | 153 337 216 | (⁴) 385 36 | 407 1,338 878 | 297 1,137 630 | 125 697 532 | 15 44 37 | 425 227 140 | 7 8 9 |
| 564 1,475 | 284 5 02 | 35 93 | 4159 703 | 45 111 | 41 66 | (4) | 35 145 | 14 208 | 9 129 | 9 10 | 1 | 10 |
| 813 | 361 | 19 | ⁴ 366 | 59 | 8 | (4) | 75 | 60 | 60 | 9 | 1 | 12 |
| 1,516 1,311 1,030 | 841 692 614 | 71 47 33 | 428 352 4270 | 125 132 72 | 27 25 41 | 24 63 (⁴) | 213 195 145 | 196 224 84 | 192 165 84 | 23 18 3 | 5 8 136 | 13 14 15 |
| 15,859 | 5,970 | 1,084 | 6,636 | 890 | 542 | 737 | 4,186 | 4,715 | 2,927 | 109 | 1,428 | 16 |
| 369 | 289 | 3 | 457 | 14 | 6 | (4) | (D) | (D) | (D) | 4 | | 17 |
| 413 2,073 | 249 940 | 34 169 | ⁴ 71 529 | 20 171 | 39 62 | (⁴) 202 | 142 128 | 69 149 | 61 101 | 6 18 | 57 146 | 18 19 |
| 1,203 1,164 5,903 | 434 365 1,344 | 147 24 386 | 4431 669 3,661 | 96 53 286 | 95 53 195 | (4) 31 | (D) 253 2,166 | (D) 121 3,266 | (D) 121 1,661 | 8 10 14 | 482 147 196 | 20 21 22 |
| 1,852 | 805 | 121 | 4798 | 101 | 27 | (4) | 692 | 398 | 353 | 13 | 277 | 23 |
| 453 | 241 | 17 | 143 | 19 | 9 | .24 | 166 | 169 | 158 | 2 | 99 | 24 |
| 1,638 | 938 | 174 | 306 | 107 | 50 | 63 | 460 | 373 | 327 | 26 | 23 | 25 |
| 791 | 365 | 9 | 100 | 23 | 6 | 288 | 89 | 65 | 65 | 8 | 1 | 26 |
| 9,360 | 3,083 | 419 | 4,646 | 395 | 213 | 604 | 572 | 823 | 489 | 64 | 443 | 27 |
| 929 | 478 | 13 | 189 | 47 | 29 | 173 | 48 | 63 | 30 | 7 | 253 | 28 |
| 575 | 241 | 47 | 4210 | 56 | 21 | (4) | 49 | 41 | 37 | 5 | 9 | 29 |
| 3,680 | 747 | 130 | 42,628 | 81 | 94 | (4) | 113 | 258 | 64 | 11 | 114 | 30 |
| 494 | 194 | 19 | 62 | 48 | 2 | 169 | (D) | (D) | (D) | 6 | ••• | 31 |
| 3,270 412 | 1,136 287 | 200 10 | 1,518 76 | 129 34 | 62 5 | 225 | 302 (D) | 414 (D) | 318 (D) | 30 5 | 10 <i>5</i> 7 | 32 33 |

 $^4\mathrm{The}$ cost of contract work is included with the cost of supplies. $^5\mathrm{See}$ table 1, footnote 8. $^6\mathrm{See}$ table 1, footnote 9.

| | | | | 19 | 954 | | | | 1939 pro | duction | |
|-------------------------------------|-----------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------------------|-----------------------------------------|--------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------|-----------------------------|--------------------------------------|--|
| | Produc | ed and | | Net ship | ments and in | terplant tra | nsfers1 | | | | |
| Type of crushed and broken stone | consumed same establishment in manufact | at the | Total | | Shipments b and plants in mineral | classified | Shipments tincluded in ments class manufacts wholesal industrial | n establish- ssified in uring and Le trade | Quantity (1,000 short tons) | Value. f.o.b. mine or plant | |
| | Hydraulic cement | Quicklime and hydrated lime | Quantity (1,000 short tons) | Value f.o.b. mine or plant (\$1,000) | Quantity (1,000 short tons) | Value f.o.b. mine or plant (\$1,000) | Quantity (1,000 short tons) | Value f.o.b. mine or plant (\$1,000) | | (\$1,000) | |
| All crushed and | | | | | | | | | | | |
| broken stone, total. | 59,150 | 10,839 | 299,115 | 459,608 | 287,162 | 438,634 | 11,953 | | ³ 132,955 | ³ 102,313 | |
| Limestone | 58,240 | 10,839 | 232,476 328,091 | | 222,471 | 311,182 | 10,005 | 16,909 | 3109,059 | ³ 76,723 | |
| Calcareous marl | 748 | | 260 | 342 | 260 | 342 | ••• | ••• | J-109,059 | -76,723 | |
| Granite | ••• | | 22,780 | 31,766 | 22,211 | 30,476 | 569 | 1,290 | 7,053 | 7,347 | |
| Slate | | | 947 | 8,199 | (D) | (D) | (D) | (D) | 309 | 2,138 | |
| Marble | | | 544 | 5,039 | 469 | 4,586 | 75 | 453 | 76 | 176 | |
| Trap rock | | | 23,574 | 40,280 | 22,489 | 38,555 | 1,085 | 1,725 | 9,816 | 9,583 | |
| Sandstone | 162 | | 9,643 | 28,697 | (D) | (D) | (D) | (D) | 2,734 | 3,218 | |
| Crushed and broken stone, n.e.c | | ••• | 8,891 | 17,194 | 8,754 | 16,883 | 137 | 311 | 3,908 | 3,128 | |

D Withheld to avoid approximately disclosing figures of individual companies.

1 See table 2A, footnote 1.

2 Represents quarries producing and shipping crushed and broken stone as a secondary product at establishments where the primary product is dressed dimension stone, bituminous concrete, hydraulic cement, lime, or ready-mixed concrete.

3 See table 1, footnote 2.

1954 Census of Mineral Industries

November 1956 Series: MI-14-4

SAND AND GRAVEL

The value of shipments of the sand and gravel industry in the United States in 1954 amounted to \$466 million. Of this total, shipments of sand and gravel amounted to \$409 million while other products and services, chiefly ready-mixed concrete, bituminous concrete, and concrete products such as brick or blocks, accounted for the remaining \$57 million. Sand and gravel valued at approximately \$7 million was used in producing the latter products. These figures exclude sand and gravel valued at \$23 million which was produced and consumed or shipped as a secondary product at establishments where the primary product is ready-mixed concrete, bituminous concrete, or concrete products such as brick or blocks. Principal expenses for establishments in the sand and gravel industry included \$147 million for wages and salaries, \$62 million for supplies, \$31 million for fuel and purchased electric energy, and \$15 million for contract work. The cost of purchased machinery installed at these mines and plants was \$48 million. Employment at these operations averaged over 36 thousand. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$46 million. Total horsepower of equipment available for use was 3,212 thousand. Water intake for use during the year, including mine water, was 185 billion gallons.

Establishments producing sand and gravel as a primary product were operated in all 48 States and in Alaska and Hawaii in 1954. The value of shipments of these operations exceeded \$20 million in 1954 in each of 7 States. Ranked in order of value of shipments, these States were: California, New York, Ohio, Illinois, Texas, Michigan, and Pennsylvania. The total quantity of 429 million short tons of sand and gravel sold or used by producing establishments in all industries was almost three and one-quarter times as large as production covered in 1939, the year represented by the preceding Census of Mineral Industries.

The sand and gravel industry, as defined in the Standard Industrial Classification, represents establishments primarily engaged in operating sand and gravel quarries, pits, and dredges, and in washing, screening, and otherwise preparing sand and gravel for construction and other special uses such as glass-making, molding, and abrasives. The production of ground sand falls within the scope of this definition. In 1954, ground sand was classified by type of sand and included in one of the three sand and gravel subindustries, according to whether it was ground common sand, ground glass sand, or ground foundry sand. In 1939, ground sand, for the most part, was classified in the common sand and gravel industry. Establishments engaged in producing only unprepared sand and gravel are included for 1954 but excluded for earlier years. Operations of companies producing sand and gravel exclusively for their own use, such as construction companies and rail-roads, were included for 1954 if separate records for these mining activities were available; all such operations were excluded for earlier years. Statistics for all years exclude sand and gravel operations carried on by Federal, State, and local governments. In 1954, the latter operations accounted for about 30 percent of the total production of sand and gravel, according to the Bureau of Mines.

Separate subindustry statistics have been tabulated for 1954, as for 1939 and 1929, for establishments primarily engaged in producing "Common sand and gravel," "Glass sand," and "Foundry sand."

COMMON SAND AND GRAVEL--The value of shipments of establishments primarily engaged in producing common sand and gravel in the United States in 1954 was \$436 million. Of this total, shipments of all types of sand and gravel amounted to \$379 million while other products and services, chiefly ready-mixed concrete, bituminous concrete, and concrete products such as brick or blocks, accounted for the remaining \$57 million. Principal expenses for these establishments included \$138 million for wages and salaries, \$57 million for supplies, \$29 million for fuel and purchased electric energy, and \$14 million for contract work, the cost of purchased machinery installed was \$46 million. Employment at these operations averaged 34 thousand. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$44 million. The total horsepower of equipment available for use was 3,065 thousand. Water intake for use during the year, including mine water, was 178 billion gallons.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

Establishments producing common sand and gravel as a primary product were operated in all 48 States and in Alaska and Hawaii in 1954. The value of shipments of these establishments exceeded \$20 million in 1954 in each of 7 States, ranked by size as follows: California, New York, Ohio, Illinois, Texas, Michigan, and Pennsylvania. The 415 million short tons of common sand and gravel sold or used in 1954 by producing establishments in all industries was more than three and one-quarter times as large as production covered in 1939.

GLASS SAND--The value of shipments of establishments primarily engaged in producing glass sand in the United States in 1954 was \$18,591 thousand. Of this total, shipments of all types of sand and gravel amounted to \$18,286 thousand and other products and services accounted for the remaining \$305 thousand. Principal expenses for these establishments included \$5,098 thousand for wages and salaries, \$3,208 thousand for supplies, \$1,647 thousand for fuel and purchased electric energy, and \$166 thousand for contract work. The cost of purchased machinery installed was \$965 thousand. Employment at these operations averaged 1,295. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$1,096 thousand. The total horsepower of equipment available for use was 61 thousand. Water intake for use during the year, including mine water, was 5,827 million gallons.

Establishments producing glass sand as a primary product were operated in 21 States in 1954. The largest producing States for such establishments, ranked by value of shipments, were: West Virginia, California, Pennsylvania, New Jersey, and Michigan. Total shipments of 5,974 thousand short tons of glass sand by producing establishments in all industries was two and one-third times as large as production in 1939.

FOUNDRY SAND--The value of shipments of establishments primarily engaged in producing foundry or molding sand in the United States in 1954 was \$11,762 thousand. Of this total, shipments of all types of sand and gravel amounted to \$11,555 thousand and other products and services accounted for the remaining \$207 thousand. Principal expenses for these establishments included \$3,657 thousand for wages and salaries, \$928 thousand for supplies, \$1,168 thousand for fuel and purchased electric energy, and \$607 thousand for contract work. The cost of purchased machinery installed was \$904 thousand. Employment at these establishments averaged 1,081. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$827 thousand. The total horsepower of equipment available for use was 86 thousand. Water intake for use during 1954, including mine water, was 1,713 million gallons.

Establishments producing foundry sand as a primary product were operated in 30 States. The three largest producing States for such establishments, ranked by value of shipments, were: New Jersey, Michigan, and Wisconsin. Total shipments of 7,531 thousand short tons of foundry sand in 1954 was more than one and three-quarters times as large as production in 1939.

GENERAL.-These statistics are derived from preliminary tabulations of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Sand and Gravel," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) in order to minimize duplication in canvassing mineral establishments. The census report forms used for the sand and gravel industry also provided the information required by the Bureau of Mines for its annual statistics on sand and gravel.

Table 1A.--PRINCIPAL STATISTICS FOR THE SAND AND GRAVEL INDUSTRY IN THE UNITED STATES: 1954, 1939, AND 1929

(For common sand and gravel operations, excludes establishments for 1954 with value of production and with expenditures less than \$500; and for 1939, excludes (1) establishments which produced only unprepared sand and gravel; and (2) those which produced less than 15,000 tons of sand or gravel except when the latter establishments had expenditures amounting to \$15,000 or more; for 1929, excludes (1) establishments which produced only unprepared sand and gravel; and (2) those which produced less than 25,000 tons of sand or gravel. For glass sand and foundry sand operations, excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500)

| | | 195 | 4 | | | 193 | 9 | | 1929 | | | | |
|-----------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------|-----------------------------------|-------------------------------------|------------------------------------------|--------------------------------------------------|-----------------------------------|-------------------------------------|-------------------------------------------|--------------------------------------------------|-----------------------------------|-------------------------------------|--|
| Item | Sand and gravel industry, total | Common sand and gravel sub- industry | Glass sand sub- industry | Foundry sand sub- industry | Sand and gravel industry, total | Common sand and gravel sub- industry | Glass sand sub- industry | Foundry sand sub- industry | Sand and gravel industry, total | Common sand and gravel sub- industry | Glass sand aub- industry | Foundry sand sub- industry | |
| Shipments of sand and gravel ¹ ,000 short tons | 395,183 | 383,630 | 5,535 | 6,018 | 122,547 | 115,543 | 3,175 | 3,829 | 175,297 | 168,886 | 2,187 | 4,224 | |
| Value of shipments1, total\$1,000 | 466,015 | 435,662 | 18,591 | 11,762 | 79,403 | 69,130 | 6,137 | 4,136 | 112,447 | 102,312 | 5,359 | 4,776 | |
| Sand and graveldo | 408,546 57,469 | 378,705 56,957 | 18,286 305 | 11,555 207 | 77,126 2,277 | 67,398 1,732 | 5,687 450 | 4,041 95 | 109,682 2,765 | 101,977 335 | 3,777 1,582 | 3,928 848 | |
| Value added in mining and mineral preparation2do | 356,729 | 334,046 | 13,701 | 8,982 | 61,935 | 53,870 | 4,625 | 3,440 | 89 , 235 | 81,159 | 4,082 | 3,994 | |
| Number of employees, total3 | 36,406 | 34,030 | 1,295 | 1,081 | 19,777 | 17,029 | 1,522 | 1,226 | 22,028 | 19,666 | 1,125 | 1,237 | |
| Production and development workers. All other employees | 30,533 5,873 | 28,423 5,607 | 1,144 151 | 966 1 15 | 16,959 2,818 | 14,584 2,445 | 1,280 242 | 1,095 131 | 18,061 3,967 | 15,994 3,672 | 1,030 95 | 1,037 200 | |
| Man-hours worked by production and development workers, total1,000 | 70,103 | 65,600 | 2,505 | 1,998 | 435 , 785 | 431,324 | 42,667 | 41,794 | (NA) | (NA) | (NA) | (NA) | |
| At mines and pitsdo On floating equipmentdo At preparation plants | 24,314 5,579 | 22,843 5,463 | 672 62 | 799 54 | 14,616 7,016 | 12,480 6,923 | 886 82 | 1,250 | (NA) (NA) | (NA) (NA) | (NA) (NA) | (NA) (NA) | |
| (including auxiliary works).do | 40,210 | 37,294 | 1,771 | 1,145 | 12,709 | 10,547 | 1,656 | 506 | (NA) | (NA) | (NA) | (NA) | |
| Principal expenses, total\$1,000 | 254,499 | 238,020 | 10,119 | 6,360 | 42,683 | 37,189 | 3,568 | 1,926 | 60,227 | 54,679 | 2,869 | 2,679 | |
| Wages of production and development workersdo | 118,966 | 111,600 | 4,279 | 3,087 | 18,822 | 16,482 | 1,456 | 884 | 25,385 | 22,780 | 1,314 | 1,291 | |
| employeesdoSuppliesdoFueldodoPurchased electric energydoContract workdodo | 27,854 61,617 21,373 9,997 14,692 | 26,465 57,481 19,758 8,797 13,919 | 819 3,208 840 807 166 | 570 928 775 393 607 | 6,393 8,493 4,632 3,805 538 | 5,447 7,432 4,156 3,273 399 | 600 747 322 366 77 | 346 314 154 166 62 | 11,630 12,946 4,452 5,353 461 | 10,746 11,917 3,990 4,921 325 | 278 675 282 305 15 | 606 354 180 127 121 | |
| Purchased machinery installeddo | 47,694 | 45,825 | 965 | 904 | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | |
| Capital expenditures (development work, construction, machinery, and equipment)do | 46,087 | 44,164 | 1,096 | 827 | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | |
| For machinery and equipment onlydo | 36,581 | 35,180 | 804 | 597 | .5,301 | 4,780 | 324 | 197 | 7,963 | 7,174 | 433 | 356 | |
| Horsepower rating of power equipment ⁵ 1,000 | 3,212 | 3,065 | 61 | 86 | 699 | . 643 | 29 | 27 | 545 | 517 | 13 | 15 | |
| Water intake ⁶ 1,000,000 gallons | 185,087 | 177,547 | 5,827 | 1,713 | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | |

NA Not available.

MA Not available.

For 1939 and 1929, represents production.

For 1939 and 1929, represents value of products shipped plus capital expenditures less cost of supplies, fuel, purchased electric energy, contract work, and purchased machinery installed; for earlier years, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "Value added" represents the value added during the year by mining and preparing sand and gravel, producing other products, performing services for others, and, for 1954, in development of mineral properties.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Represents an average of 12 monthly figures for the payroif ending hearest the 15th of each month.

Represents man-hours worked on active and inactive days. However, the distribution of man-hours by department represents only man-hours worked on active days.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased electric energy.

Represents total water intake from publicly and privately owned systems, and mine water used for mineral preparation.

Table 1B. -- SELECTED STATISTICS FOR SAND AND GRAVEL MINING OPERATIONS IN THE SAND AND GRAVEL INDUSTRY

| AND IN MANUFACTURING AND WHOLESALE TRADE | INDUSTRIES F | OR THE UNIT | ED STATES: 1 | .954 | | |
|---------------------------------------------------------------|---------------------------|-----------------------------|-----------------------------------------------|--------------------------------|-----------------------------|-------------------------------------------------------------------------------|
| | United | | ts, dredges, the sand and | | | Mines, pits, and dredges included |
| Item | States, total | Total | Common sand and gravel sub- industry | Glass sand sub- industry | Foundry sand sub- industry | in establishments classified in manufacturing and wholesale trade industries1 |
| Sand and gravel shipped Quantity | 406,647 420,836 | 395 , 183 408,546 | | 5,535 18,286 | 6,018 11,555 | 11,464 12,290 |
| Quantity | 421,537 437,926 | 400,690 415,142 | 389,111 385,281 | 5,561 18,306 | 6,018 11,555 | 20,847 22,784 |
| Man-hours worked by production and development workers, total | 77,727 | 70,103 | 65,600 | 2,505 | 1,998 | 7,624 |
| At mines and pits | 27,068 5,723 44,936 | 24,314 5,579 40,210 | 5,463 | 672 62 1,771 | 799 54 1, 1 45 | 2,754 144 4,726 |
| Wages of production and development workers\$1,000 | 133,666 | 118,966 | 111,600 | 4,279 | 3,087 | 14,700 |

Represents sand and gravel mines, pits, and dredges in establishments primarily producing ready-mixed concrete, bituminous concrete, or concrete

products such as brick or blocks.

Represents and and gravel sold to consumers or used by the producer in the production of ready-mixed concrete, bituminous concrete, or concrete products such as brick or blocks.

| | | Table 2 | -PRINCIPAL | STATISTICS | FUR THE SAN | E SAND AND GRAVEL INDUSTRY FOR THE UNITED S | | | |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|------------------------------------------------|
| | | | Value of | shipments | (\$1,000) | Value added in | Numb | er of emplo | yees ² |
| Line no. | Industry, division, and State | Shipments of sand and gravel (1,000 short tons) | Total | Sand and gravel | Other products and services | mining and mineral prepara- tion ¹ (\$1,000) | Total | Produc- tion and develop- ment workers | All other employees |
| 1 | "nited States ⁵ Sand and gravel industry, total | 395,183 | 466,015 | 408,546 | 57,469 | 356,729 | 36,406 | 30,533 | 5,873 |
| 2 3 4 | Common sand and gravel subindustry | 383,630 5,535 6,018 | 435,662 18,591 11,762 | 378,705 18,286 11,555 | 56,957 305 207 | 334,046 13,701 8,9 8 2 | 34,030 1,295 1,081 | 28,423 1,144 966 | 5,607 151 115 |
| 5 6 7 8 9 | New England: Maine. New Hampshire. Vermont. Massachusetts. Rhode Island. Connecticut. | 798 808 611 6,738 798 3,645 | 583 926 814 7,123 1,008 4,566 | 575 926 767 6,117 766 3,904 | 47 1,006 242 662 | 462 846 644 5,761 795 3,810 | 79 99 100 732 87 340 | 66 87 78 613 75 270 | 13 12 22 119 12 70 |
| 11 | Middle Atlantic: New York, total | 25,751 | 29,411 | 26,437 | 2,974 | 23,542 | 1,777 | 1,434 | 343 |
| 12 13 | Common sand and gravel subindustry | 25,508 243 | 28,709 702 | 25,756 681 | 2,953 21 | 23,026 516 | 1,707 70 | 1,370 64 | 337 6 |
| 14 | New Jersey, total | 9,677 | 15,490 | 14,369 | 1,121 | 10,829 | 1,009 | 852 | 157 |
| 15 16 17 | Common sand and gravel subindustry | 7,489 842 1,346 | 9,733 2,289 3,468 | 8,649 2,289 3,431 | 1,084 37 | 6,976 1,223 2,630 | 650 99 260 | 538 82 232 | 112 17 28 |
| 18 | Pennsylvania, total | 14,048 | 23,305 | 21,382 | 1,923 | 18,853 | 1,599 | 1,349 | 250 |
| 19 20 | Common sand and gravel subindustry | 13,227 821 | 20,508 2,797 | 18,586 2,796 | 1,922 1 | 16,725 2,128 | 1,328 271 | 1,102 247 | 226 24 |
| 21 | East North Central: Chio, total | 24,062 | 29,059 | 26,372 | 2,687 | 23,844 | 2,267 | 1,884 | 383 |
| 22 23 | Common sand and gravel subindustry | 23,589 473 | 27,566 1,493 | 24,885 1,487 | 2,681 6 | 22,753 1,091 | 2,061 206 | 1,709 175 | 352 31 |
| 24 | Indiana, total | 15,070 | 14,140 | 13,074 | 1,066 | 10,952 | 1,256 | 1,055 | 201 |
| 25 26 | Common sand and gravel subindustry Foundry sand subindustry | 14,752 318 | 13,689 451 | 12,623 451 | 1,066 | 10,593 359 | 1,229 27 | 1,031 24 | 198 |
| 27 | Illinois, total | 22,094 | 26,492 | 24,505 | 1,987 | 20,412 | 1,887 | 1,615 | 272 |
| 28 29 | Common sand and gravel subindustry Foundry sand subindustry | 21,683 411 | 25,806 686 | 23,887 618 | 1,919 68 | 19,975 437 | 1,809 78 | 1,552 63 | 257 15 |
| 30 | Michigan, total | 26,041 | 24,486 | 22,529 | 1,957 | 19,260 | 1,735 | 1,464 | 271 |
| 31 32 | Common sand and gravel subindustry Class sand and foundry sand subindustries | 24,255 1,786 | 21,867 2,619 | 19,910 2,619 | 1,957 | 17,086 2,174 | 1,615 120 | 1,364 100 | 251 |
| 33 | Wisconsin, total | 13,940 | 12,142 | 11,153 | 989 | 9,136 | 1,071 | 873 | 198 |
| 34 35 | Common sand and gravel subindustry. Glass sand and foundry sand subindustries | 13,260 680 | 11,077 1,065 | 10,095 | 982 - 7 | 8,391 745 | 998 73 | 808 65 | 190 |
| 36 37 38 39 40 41 | West North Central: Minnesota Iowa Missouri North Dakota and South Dakota Nebraska Kansas | 12,155 8,866 8,003 8,447 7,819 8,043 | 11,561 8,962 8,513 6,741 6,994 7,313 | 10,275 7,887 8,213 6,484 6,583 6,187 | 1,286 1,075 300 257 411 1,126 | 8,784 6,539 6,629 5,088 4,803 5,529 | 1,044 674 778 641 682 665 | 810 584 675 574 610 547 | 234 90 103 67 72 118 |
| 42 43 44 45 46 47 48 49 | South Atlantic: Delaware. Maryland. Virginia. West Virginia. North Carolina. South Carolina. Georgia. Florida. | 671 8,646 6,084 4,059 4,482 2,815 3,052 3,706 | 770 11,862 13,616 8,884 4,446 2,738 2,723 3,246 | 567 11,278 7,635 8,291 4,378 2,625 2,715 2,880 | 203 584 5,981 593 68 113 8 366 | 566 8,799 9,341 7,107 3,606 2,182 2,179 2,421 | 50 918 961 748 480 323 322 324 | 43 798 569 601 420 285 299 286 | 7 120 392 147 60 38 23 38 |
| 50 | East South Central: Kentucky | 3,983 | 4,375 | 4,047 | 328 | 3,312 | 412 | 323 | 89 |
| 51 | Tennessee, total | 4,680 | 6,112 | 5,609 | 503 | 4,731 | 762 | 706 | 56 |
| 52 53 | Common aand and gravel subindustry | 4,443 237 | 5,478 634 | 4,975 634 | 503 | 4,284 447 | 691 71 | 640 66 | 51 5 |
| 54 55 | Alabama. Mississippi | 3,582 5,384 | 3,583 5,561 | 3,501 4,701 | 82 860 | 2,527 3,880 | 450 542 | 403 482 | 47 60 |

See footnotes at end of table.

| | | | roduction s (1,000) | | P: | rincipal | expenses | (\$1,000) | | | | Capital ex (\$1,0 | | Horse- | | |
|-----------------------------------------------------------|-----------------------------------------------------|-------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------|-------------------------------------------|-------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------|
| Total | At mines and pits | On float- ing equip- ment | At preparation plants (including auxiliary works) | Total | Wages of produc- tion and develop- ment workers | Salaries of all other employ- ees | Supplies | Fuel | Pur- chased electric energy | Contract work | Purchased machinery installed (\$1,000) | Develop- ment work, con- struction, machinery, and equipment | For machinery and equipment only | power rating of power equip- ment ³ (1,000) | Water intake ⁴ (Million gallons) | Line no. |
| 70,103 | 24,314 | 5,579 | 40,210 | 254,499 | 118,966 | 27,854 | 61,617 | 21,373 | 9,997 | 14,692 | 47,694 | 46,087 | 36,581 | 3,212 | 185,087 | 1 |
| 65,600 2,505 1,998 | 22,843 672 799 | 5,463 62 54 | 37,294 1,771 1,145 | 238,020 10,119 6,360 | 111,600 4,279 3,087 | 26,465 819 570 | 57,481 3,208 928 | 19,758 840 775 | 8,797 807 393 | 13,919 166 607 | 45,825 965 904 | 44,164 1,096 827 | 35,180 804 597 | 3,065 61 86 | 177,547 5,827 1,713 | 3 |
| 142 163 174 1,283 141 616 | 69 69 63 594 82 305 | 19 | 73 94 92 689 59 311 | 351 480 521 4,107 574 2,360 | 183 303 246 2,217 247 1,129 | 35 45 63 435 60 337 | 46 53 63 784 166 476 | 45 45 73 382 83 231 | 8 29 6 123 14 99 | 34 5 70 166 4 88 | 109 142 130 919 152 436 | 121 194 172 1,012 206 574 | 109 110 137 856 118 403 | 7 8 10 61 12 37 | 90 370 173 3,499 266 3,226 | 6 7 |
| 3,370 | 1,418 | 112 | 1,840 | 14,061 | 6,876 | 1,925 | 2,991 | 849 | 517 | 903 | 2,479 | 1,870 | 1,647 | 159 | 7,094 | 11 |
| 3,235 135 | 1,337 81 | 112 | 1,786 54 | 13,702 359 | 6,707 169 | 1,896 29 | 2,928 63 | 797 52 | 514 3 | 860 43 | 2,397 82 | 1,813 57 | 1,599 48 | 152 7 | 6,986 108 | |
| 1,963 | 496 | 175 | 1,292 | 8,955 | 3,670 | 952 | 2,439 | 691 | 577 | 626 | 1,511 | 1,183 | 889 | 83 | 6,588 | 14 |
| 1,252 191 520 | 341 27 128 | 137 16 22 | 774 148 370 | 5,541 1,522 1,892 | 2,371 366 933 | 663 98 1 91 | 1,424 827 188 | 454 97 140 | 281 128 168 | 348 6 272 | 1,266 27 218 | 1,016 19 148 | 785 5 99 | 56 6 21 | 5,451 - 638 499 | |
| 3,138 | 771 | 615 | 1,752 | 12,031 | 5,627 | 1,464 | 2,852 | 904 | 514 | 670 | 1,638 | 2,126 | 1,266 | 87 | 9,603 | 18 |
| 2,600 538 | 581 190 | 615 | 1,404 348 | 10,237 | 4,676 951 | 1,341 123 | 2,447 405 | 759 145 | 375 139 | 639 | 1,496 142 | 1,933 193 | 1,134 | 79 8 | 7,503 2,100 | 19 20 |
| 4,219 | 1,611 | 164 | 2,444 | 14,079 | 7,280 | 1,843 | 2,684 | 1,072 | 834 | 366 | 3,884 | 3,625 | 2,764 | 189 | 27,743 | 21 |
| 3,908 | 1,486 | 164 | 2,258 186 | 13,102 977 | 6,823 457 | 1,740 103 | 2,459 225 | 973 99 | 764 70 | 343 23 | 3,700 184 | 3,426 199 | 2,593 171 | 176 | 27,409 334 | 22 23 |
| 2,566 | 942 | 274 | 1,350 | 8,136 | 4,109 | 988 | 1,585 | 682 | 487 | 285 | 1,907 | 1,758 | 1,450 | 120 | 8,085 | 24 |
| 2,515 51 | 917 25 | 274 | 1,324 26 | 7,939 | 4,016 93 | 974 14 | 1,543 42 | 649 33 | 477 10 | 280 5 | 1,880 27 | 1,733 25 | 1,442 8 | 117 3 | 8,085 | 25 26 |
| 3,695 | 1,001 | 194 | 2,500 | 15,326 | 7,072 | 1,440 | 3,651 | 1,164 | 661 | 1,338 | 1,998 | 2,732 | 1,912 | 141 | 12,920 | 27 |
| 3,566 129 | 962 39 | 173 21 | 2,431 69 | 14,757 569 | 6,850 222 | 1,360 80 | 3,583 68 | 1,095 69 | 630 31 | 1,239 99 | 1,919 79 | 2,635 97 | 1,844 68 | 132 9 | 12,915 5 | 28 29 |
| 3,235 | 1,400 | 99 | 1,736 | 12,052 | 6,431 | 1,122 | 1,915 | 1,022 | 647 | 915 | 3,092 | 2,365 | 1,962 | 173 | 11,233 | 30 |
| 2,998 237 | 1,299 101 | 99 | 1,600 136 | 11,006 1,046 | 6,003 428 | 975 147 | 1,749 166 | 865 157 | 575 72 | 839 76 | 2,920 172 | 2,167 198 | 1,842 120 | 164 9 | 10,453 780 | 31 32 |
| 2,000 | 857 | 9 | 1,134 | 7,777 | 3,476 | 1,155 | 1,158 | 890 | 197 | 901 | 1,240 | 1,380 | 1,187 | 128 | 3,718 | 33 |
| 1,873 | 798 59 | 9 | 1,066 68 | 7,135 642 | 3,218 258 | 1,129 26 | 1,025 133 | 752 138 | 149 48 | 862 39 | 1,148 92 | 1,250 130 | 1,090 97 | 121 7 | 3,601 117 | 34 3 5 |
| 1,777 1,462 1,455 1,261 1,545 | 802 601 307 497 274 488 | 15 101 274 15 474 176 | 960 760 874 749 797 630 | 7,028 5,052 5,203 3,890 4,548 4,221 | 3,226 2,166 2,730 2,013 2,226 2,018 | 912 319 436 269 247 431 | 1,502 1,246 1,176 331 1,131 1,054 | 761 573 359 678 631 403 | 173 268 163. 46 119 146 | 454 480 339 553 194 169 | 1,593 1,123 872 982 872 644 | 1,706 1,267 1,025 937 756 632 | 1,150 970 799 863 699 543 | 120 95 50 71 78 77 | 4,587 4,174 1,639 1,289 2,647 4,603 | 37 38 39 40 |
| 91 2,077 1,325 1,340 995 678 678 745 | 54 664 296 262 273 177 305 207 | 349 117 169 16 35 50 97 | 37 1,064 912 909 706 466 323 441 | 375 6,116 7,792 4,402 2,253 1,530 1,426 1,940 | 146 2,895 1,978 2,117 1,163 768 723 889 | 29 464 1,513 643 262 154 86 147 | 19 1,543 2,967 1,046 524 260 336 415 | 48 699 407 367 179 172 192 202 | 8 183 155 220 89 138 59 | 125 332 772 9 36 38 30 208 | 114 1,113 1,160 767 234 301 215 214 | 110 807 1,186 632 222 353 288 293 | 83 731 1,133 554 213 276 183 187 | 9 62 52 26 32 31 21 | 314 3,764 3,205 3,533 2,048 2,550 1,475 1,962 | 43 44 45 46 47 48 |
| 891 | 120 | 385 | 386 | 2,862 | 1,207 | 545 | 781 | 219 | 33 | 77 | 520 | 567 | 462 | 25 | 1,964 | 50 |
| 1,668 | 398 | 248 | 1,022 | 3,882 | 2,270 | 276 | 746 | 374 | 102 | 114 | 395 | 350 | 301 | 35 | 4,380 | 51 |
| 1,551 | 380 18 | 248 | 923 99 | 3,549 333 | 2,143 127 | 257 19 | 693 53 | 333 41 | 91 11 | 32 82 | 383 12 | 338 /12 | 291 10 | 30 5 | 4,220 160 | 52 53 |
| 943 | 485 276 | 96 233 | 362 613 | 1,803 3,143 | 1,039 1,332 | 148 123 | 213 989 | 231 372 | 118 126 | 54 201 | 653 638 | 213 645 | 203 617 | 32 31 | 2,518 4,906 | 54 55 |

| | | Table 2 | -INTROLIAL | SIATISTICS | FOR THE SA | ND AND GRAVE | INDOSTRI | FOR THE UNI | TIED STATES, |
|----------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|---------------------------------------|------------------------------------------------------------------------|---------------------------------------|----------------------------------------------------|---------------------------------|
| | | Shipments | Value of | Shipments | (\$1,000) | Value added in | Numb | er of emplo | yees ² |
| Line no. | Industry, division, and State | of sand and gravel (1,000 short tons) | Total | Sand and gravel | Other products and services | mining and mineral prepara- tion ¹ (\$1,000) | Total | Produc- tion and develop- ment workers | All other employees |
| | West South Central: | | | | | | | | |
| 1 2 | Arkansas. Louisiana | 3,926 8,564 | 4,605 10,924 | 4,569 10,467 | 36 457 | 3,139 7,363 | 427 1,119 | 405 1,007 | 22 112 |
| 3 | Oklahoma, total | 3,322 | 3,709 | 3,548 | 161 | 2,956 | 363 | 327 | 36 |
| 4 5 | Common sand and gravel subindustry | 2,984 338 | 2,884 825 | 2,723 825 | 161 | 2,334 622 | 287 76 | 256 71 | 31 5 |
| 6 | Texas, total | 23,299 | 25,839 | 23,948 | 1,891 | 18,002 | 2,453 | 2,275 | 178 |
| 7 8 9 | Common sand and gravel subindustry. Glass sand subindustry. Foundry sand subindustry. | 22,924 252 123 | 25,057 576 206 | 23,168 576 204 | 1,889 | 17,394 463 145 | 2,357 62 34 | 2,185 57 33 | 172 5 1 |
| 10 11 12 13 14 15 16 | Mountain: Montana Idaho. Wyoming Colorado. New Mexico. Arizona Utah | 2,160 2,484 778 6,414 3,062 1,321 2,449 | 2,568 2,559 633 6,185 3,687 1,597 1,748 | 1,820 2,081 588 5,660 3,088 1,342 1,748 | 748 478 45 525 599 255 | 1,337 1,868 319 5,028 3,092 1,349 1,409 | 215 195 81 482 161 121 | 187 178 77 390 144 92 | 28 17 4 92 17 29 |
| 17 | Nevada, total | 1,638 | 3,463 | 1,999 | 1,464 | 1,990 | 181 | 146 | 35 |
| 18 19 | Common sand and gravel subindustry | 1,438 | 2,780 683 | 1,316 683 | 1,464 | 1,458 532 | 133 48 | 101 45 | 32 3 |
| 20 21 | Pacific: Washington | 10,137 8,074 | 11,863 12,340 | 8,823 8,486 | 3,040 3,854 | 8,601 8,932 | 914 913 | 668 817 | 246 96 |
| 22 | California, total | 48,997 | 66,750 | 53,647 | 13,103 | 54,175 | 3,806 | 2,944 | 862 |
| 23 24 | Common sand and gravel subindustry | 48,492 505 | 64,072 2,678 | 51,093 2,554 | 12,979 124 | 51,890 2,285 | 3,687 119 | 2,844 | 843 19 |
| 25 | Alaska and Hawaii ⁵ | 548 | 1,183 | 1,180 | 3 | 854 | 29 | 27 | 2 |

¹See table 1A, footnote 2. ²See table 1A, footnote 3. ³See table 1A, footnote 5.

| | | | oduction (1,000) | | | Principal | expenses | (\$1,000 |)) | | | Capital ex (\$1,0 | | Horse- | | |
|-----------------------------------------------|---------------------------------------------|---------------------------------------|---------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|--------------------------------------|---------------------------------------|-----------------------------|--------------------------------------------------|--------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------|
| Total | At mines and pits | On float- ing equip- ment | At preparation plants (including auxiliary works) | Total | Wages of produc- tion and develop- ment workers | Salaries of all other employ- ees | Supplies | Fuel | Pur- chased electric energy | Contract work | Purchased machinery installed (\$1,000) | Develop- ment work, con- struction, machinery, and equipment | machinery | power rating of power equip- ment ³ (1,000) | Water intake ⁴ (Million gallons) | Line no. |
| 910 2,446 | 372 802 | 76 239 | 462- 1,405 | 2,680 7,033 | 1,146 2,972 | 1 1 1 395 | 1,083 2,577 | 184 565 | 93 396 | 63 128 | 422 654 | 379 759 | 311 604 | 24 57 | 1,447 4,806 | 1 2 |
| 755 | 201 | 84 | 470 | 1,986 | 1,074 | 168 | 363 | 189 | 166 | 26 | 652 | 643 | 576 | 28 | 1,751 | 3 |
| 581 174 | 162 39 | 74 10 | 345 125 | 1,520 466 | 835 239 | 147 21 | 259 104 | 129 60 | 124 42 | 26 | 469 183 | 457 186 | 417 159 | 22 6 | 1,210 541 | 4 5 |
| 5,915 | 2,396 | 347 | 3,172 | 15,084 | 7,352 | 821 | 3,583 | 1,253 | 477 | 1,598 | 3,971 | 3,045 | 2,578 | 173 | 7,575 | 6 |
| 5,708 135 72 | 2,324 34 38 | 347 | 3,037 101 34 | 14,659 293 132 | 7,115 163 74 | 799 20 2 | 3,488 62 33 | 1,202 32 19 | 462 12 3 | 1,593 4 1 | 3,910 31 30 | 2,992 28 25 | 2,537 16 25 | 166 3 4 | 7,268 125 182 | 7 8 9 |
| 340 378 147 887 310 225 281 | 147 138 52 390 126 94 118 | 2 1 1 9 30 9 | 191 239 94 488 154 122 163 | 1,978 1,463 569 3,126 1,227 790 936 | 744 755 289 1,602 513 372 520 | 106 85 9 338 72 143 49 | 468 353 112 687 365 193 214 | 121 199 84 361 186 51 | 25 19 5 113 9 31 42 | 514 52 70 25 82 | 295 444 157 779 375 163 282 | 192 376 114 808 422 190 310 | 174 361 71 730 337 156 247 | 28 46 15 50 41 16 20 | 254 675 65 480 84 226 | 10 11 12 13 14 15 16 |
| 308 | 181 | 1 | 126 | 2,503 | 712 | 290 | 1,285 | 148 | 27 | 41 | 252 | 280 | 214 | 13 | 467 | 17 |
| 215 93 | 126 55 | | 88 38 | 2,128 375 | 514 198 | 264 26 | 1,203 82 | 117 31 | 14 13 | 16 25 | 238 14 | 266 14 | 210 4 | 12 1 | 411 56 | 18 19 |
| 1,285 1,709 | 476 537 | 21 172 | 788 1,000 | 7,932 7,457 | 3,092 3,697 | 1,529 544 | 2,221 2,133 | 530 566 | 170 179 | 390 338 | 1,594 1,481 | 1,643 1,289 | 1,298 1,011 | 112 92 | 2,814 1,738 | 20 21 |
| 6,155 | 2,120 | 76 | 3,959 | 31,459 | 14,354 | 4,326 | 8,838 | 1,835 | 1,307 | 799 | 4,126 | 4,330 | 3,136 | 415 | 16,351 | 22 |
| 5,948 207 | 2,085 35 | 76 | 3,787 172 | 30,434 1,025 | 13,901 453 | 4,202 124 | 8,598 240 | 1,770 65 | 1,209 98 | 754 45 | 3,961 165 | 4,110 220 | 2,985 151 | 407 8 | 16,158 193 | 23 24 |
| 75 | 41 | ••• | 34 | 472 | 290 | 10 | 17 | 54 | 1 | 100 | 198 | 41 | 41 | 10 | 15 | 25 |

 $^{^4\}mathrm{See}$ table 1A, footnote 6. $^5\mathrm{Statistics}$ for Alaska and Hawaii are not included in the United States totals.

| | | | 19 | 954 | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------|
| | | | | Products so | old or used | | | |
| Type of sand or gravel | Shipmer interp trans | | other | ereened, or wise pared | (unwas) | other ned and eened - c or bank) | 1939 prod | luction ¹ |
| | Quantity (1,000 short tons) | Value f.o.b. plant or shipping point (\$1,000) | Quantity (1,000 short tons) | Value f.o.b. plant or shipping point (\$1,000) | Quantity (1,000 short tons) | Value f.o.b. plant or shipping point (\$1,000) | Quantity (1,000 short tons) | Value f.o.b. plant or shipping point (\$1,000) |
| UNITED STATES | | | | | | | | |
| Sand and gravel, total | 412,335 | 425,500 | 382,337 | 417,552 | 46,262 | 27,523 | 132,698 | 82,345 |
| By major type: Common sand and gravel Glass sand. Foundry sand | 398,830 5,974 7,531 | 393,370 16,720 15,410 | 370,286 5,819 6,232 | 387,054 16,539 13,959 | 44,824 136 1,302 | 25,916 157 1,450 | 125,999 2,598 4,101 | 73,200 4,515 4,630 |
| By use: Sand, total | 180,898 | 192,808 | 172,114 | 189,996 | 16,113 | 10,179 | 69,487 | 42,961 |
| Unground sand, total | 179,853 | 186,436 | 171,045 | 183,597 | 16,113 | 10,179 | ² 69,487 | ²42,961 |
| Glass sand (for melting only) | 5,954 | 16,596 | 5,799 | 16,415 | 136 | 157 | 2,598 | 4,515 |
| Molding sand (including sand for pig beds, steel, brass, iron, cores, etc.) Building sand (except for road | 7,324 | 14,019 | 6,025 | 12,568 | 1,302 | 1,450 | 4,101 | 4,630 |
| structures) | 98,852 | 89,997 | 99,286 | 92,227 | 4,725 | 3,090 | ³ 58,142 | ³ 30,035 |
| bridges, culverts, etc. Grinding and polishing sand Blast sand. Fire and furnace sand Engine sand. Filter sand. Railroad ballast. Other unground sand | 53,145 907 574 440 1,316 557 936 9,848 | 46,837 1,571 2,418 860 1,642 1,004 513 | 49,990 907 553 409 1,070 434 707 5,865 | 45,721 1,571 2,373 821 1,444 882 404 9,171 | 4,717 16 31 252 123 229 4,582 | 2,553 45 39 205 122 109 2,409 | 543 262 68 1,288 138 1,195 1,152 | 351 514 111 907 167 320 1,411 |
| Ground sand, total | 1,045 | 6,372 | 1,069 | 6,399 | | |] | |
| Abrasives. Enamel. Filler. Foundry uses. Glass. Pottery, porcelain, and tile Other uses (including ferrosilicon and | 263 24 235 207 20 150 | 1,571 229 903 1,391 124 1,283 | 263 24 249 207 20 150 | 1,571 229 908 1,391 124 1,283 | | | (2) | (²) |
| sand for filter purposes) | 146 | 871 | 156 | 893 | ••• | | J | |
| Gravel, total | 231,437 | 232,692 | 210,223 | 227,556 | 30,149 | 17,344 | 63,211 | 39,384 |
| Building gravel (except for road structures) Paving and road gravel and gravel used in bridges, culverts, etc | 87,177 121,199 8,216 14,845 | 98,738 115,265 5,551 13,138 | 87,761 106,643 6,443 9,376 | 102,261 110,121 4,838 10,336 | 5,168 17,097 1,778 6,106 | 3,545 9,686 720 3,393 | 5,579 1,109 | 436,333 2,409 642 |
| ALASKA AND HAWAII | | | | | | | | |
| Sand and gravel ⁵ | 692 | 1,325 | 703 | 1,582 | 117 | 71 | (NA) | (NA) |

NA Not available.

Excludes the production of unprepared sand and gravel by establishments which did not also produce prepared sand or gravel.

For 1939, figures for ground sand are included with those for unground sand.

Includes an estimated 5,275 thousand tons valued at \$2,681 thousand from establishments too small to come within the scope of the 1939 minerals census and from establishments classified in other industries.

Includes an estimated 4,804 thousand tons valued at \$2,462 thousand from establishments too small to come within the scope of the 1939 minerals census and from establishments classified in other industries.

Represents building and paving sand, engine sand, building and paving gravel, railroad ballast gravel, and other gravel.

1954 Census of Mineral Industries

October 1956 Series: MI-14-5-1

CLAY, CERAMIC, AND REFRACTORY MINERALS, EXCEPT FELDSPAR

BENTONITE--The value of shipments of the bentonite industry in 1954 was \$21,830 thousand. The principal expenses of this industry included \$2,135 thousand for wages and salaries, \$2,916 thousand for supplies and minerals received for preparation, \$773 thousand for fuel and purchased electric energy, and \$1,829 thousand for contract work. The cost of purchased machinery installed was \$604 thousand. Employment in the industry averaged about 600. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$642 thousand. The total horsepower of equipment available for use in the industry was 34 thousand and total water intake for use during the year was 12 million gallons.

The 1,477 thousand tons of net shipments of bentonite in 1954 was six and one-half times as large as production in 1939, the year covered by the preceding Census of Mineral Industries. Employment in the bentonite industry increased about 50 percent between 1939 and 1954, while horsepower of power equipment available in 1954 was almost five times as great as in 1939. Establishments in the bentonite industry in 1954 were located in 10 States, with Wyoming the leading State.

The "Bentonite" industry as defined in the Standard Industrial Classification represents establishments primarily engaged in mining, milling, or otherwise preparing bentonite. In 1954, establishments engaged in preparing bentonite which do not include a mine are classified in the manufacturing industry, "Minerals and earths: ground or otherwise treated." There were no such establishments in 1939.

FIRE CLAY--The value of shipments of the fire clay industry in 1954 (excluding mines operated as part of manufacturing plants) was \$22,205 thousand. Principal expenses of the fire clay industry included \$6,598 thousand for wages and salaries, \$2,146 thousand for supplies and minerals received for preparation, \$941 thousand for fuel and electric energy, and \$1,686 thousand for contract work. The cost of purchased machinery installed was \$1,292 thousand. Employment in this industry averaged almost 2,000. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$1,327 thousand. The total horsepower of equipment available for use was 101 thousand. Water intake for use during the year was 157 million gallons.

The 8,747 thousand tons of fire clay net shipments and production for use in associated manufacturing plants in 1954 was more than twice as large as production in 1939, the year covered by the preceding Census of Mineral Industries. Man-hours used to produce fire clay decreased slightly between 1939 and 1954, while wages paid to produce fire clay almost tripled over the same period. Fire clay mines were operated in 33 States with Ohio, Pennsylvania, and Missouri the leading States; although in 11 States all fire clay mines were operated as part of manufacturing establishments.

The "Fire clay" industry as defined in the Standard Industrial Classification represents establishments primarily engaged in mining, milling, or otherwise preparing fire clay, including stoneware clay and diaspore. However, if a mine producing fire clay as the principal product is part of an establishment manufacturing clay or pottery products, the entire establishment is classified in the manufacturing industry. In 1954, such operations were included in the following manufacturing industries: "Brick and hollow tile," "Sewer pipe," "Clay refractories," "Structural clay products, not elsewhere classified," and "Pottery products, not elsewhere classified." In 1939, all such mines were classified in the fire clay industry. Nearly half of all fire clay was mined at such manufacturing establishments in 1954. Selected statistics for such mines are included in Tables 1 and 3 of this report, but not in Table 2.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

FULLER'S EARTH--The value of shipments of the fuller's earth industry in 1954 was \$6,012 thousand. The principal expenses of the industry included \$1,744 thousand for wages and salaries, \$840 thousand for supplies, \$756 thousand for fuel and purchased electric energy, and \$223 thousand for contract work. The cost of purchased machinery installed was \$539 thousand. Employment in the industry averaged about 600. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$525 thousand. The total horsepower of equipment available for use in the industry was 23 thousand and total water intake for use during the year was 51 million gallons.

The 311 thousand tons of net shipments of fuller's earth in 1954 was almost one and three-quarters times as large as production in 1939, the year covered by the preceding Census of Mineral Industries. However, employment in the fuller's earth industry decreased by 17 percent between 1939 and 1954, while horse-power of power equipment available in 1954 was one and one-half times as great as in 1939. Establishments in the fuller's earth industry in 1954 were located in 7 States with Florida the leading State.

The "Fuller's earth" industry as defined in the Standard Industrial Classification represents establishments primarily engaged in mining, milling, or otherwise preparing fuller's earth. The figures in this release for 1954, 1939, and 1919 represent such operations. For 1929, however, the statistics include, in addition to operations that produced fuller's earth, operations that produced artifically activated bleaching or clarifying earths, principally bentonite. The quantity of these other earths produced in 1929 was relatively small. For 1954, establishments engaged in preparing fuller's earth which do not include a mine are classified in the manufacturing industry, "Minerals and earths: ground or otherwise treated." Such establishments were included in the fuller's earth industry in 1939.

KAOLIN AND BALL CLAY--The value of shipments of the kaolin and ball clay industry in 1954 (excluding mines operated as part of manufacturing plants) was \$31,892 thousand. Principal expenses of the kaolin and ball clay industry included \$9,943 thousand for wages and salaries, \$4,590 thousand for supplies and minerals received for preparation, \$2,381 thousand for fuel and electric energy, and \$1,362 thousand for contract work, The cost of purchased machinery installed was \$2,601 thousand. Employment in this industry averaged over 3,100. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$4,291 thousand. The total horsepower of equipment available for use was 97 thousand. Water intake for use during the year was 3,890 million gallons.

The 2,219 thousand tons of kaolin and ball clay net shipments and production for use in associate manufacturing plants in 1954 was two and one-half times as large as production in 1939, the year covered by the preceding Census of Mineral Industries. Man-hours used to produce kaolin and ball clay increased only 4 percent between 1939 and 1954, while wages paid to produce kaolin and ball clay in 1954 were almost four and one-half times as large as in 1939. Kaolin and ball clay mines were operated in 16 States, with Georgia the leading State; although in 3 States all kaolin and ball clay mines were operated as part of manufacturing establishments. Imports of crude kaolin in 1954 amounted to 120 thousand long tons valued at \$2,217 thousand. Nearly all of these imports were from the United Kingdom.

The "Kaolin and ball clay" industry represents establishments primarily engaged in mining, milling, or otherwise preparing kaolin or ball clay, including china clay, paper clay, and slip clay. However, if a mine producing kaolin or ball clay as the principal product is part of an establishment manufacturing clay, pottery, or related products, the entire establishment is classified in the manufacturing industry. In 1954, such operations were included in the following manufacturing industries: "Cement, hydraulic," "Brick and hollow tile," "Sewer pipe," "Clay refractories," "Structural clay products, not elsewhere classified," "Porcelain electrical supplies," and "Pottery products, not elsewhere classified." In 1939, all such mines were classified in the kaolin and ball clay industry. In addition, in 1939 mines producing miscellaneous special clays, and rotary drilling muds, as the principal product were classified in this industry, whereas in 1954 establishments primarily producing special clays are included in the "Clay, ceramic, and refractory minerals, n.e.c.," industry and all clays were classified by type rather than use. Thus rotary drilling muds were partly included in 1954 in the "Bentonite" industry, partly in the "Clay, ceramic, and refractory minerals, n.e.c.," industry, and possibly in other industries. (See Table 3 for detailed statistics on these products.) In 1954, only 5 percent of all kaolin and ball clay was mined at such manufacturing establishments. Selected statistics for such mines are included in Tables 1 and 3 of this report, but not in Table 2.

MAGNESITE AND BRUCITE--The value of shipments of the magnesite and brucite industry in 1954 was \$1,655 thousand. The principal expenses of the industry included \$539 thousand for wages and salaries, \$212 thousand for supplies, and \$71 thousand for fuel and purchased electric energy. The cost of purchased machinery installed was \$17 thousand. Employment in the industry averaged 132. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$17 thousand. The total horsepower of equipment available for use in the industry was 14 thousand and total water intake for use during the year was 1,051 million gallons.

The 337 thousand tons of net shipments of magnesite and brucite in 1954 was about one and three-quarters times as large as production in 1939. Employment in the magnesite and brucite industry decreased by more than 40 percent between 1939 and 1954, while horsepower of power equipment available in 1954 was seven times as great as in 1939. Establishments in the magnesite and brucite industry in 1954 were located in 3 States, with Nevada the leading State.

The magnesite and brucite industry represents establishments primarily engaged in mining, milling, or otherwise preparing crude magnesite or brucite. Calcining activities are excluded for 1954 and 1939, but are included for 1929 and 1919 where the calcining was done at preparation plants located at the mines.

CLAY, CERAMIC, AND REFRACTORY MINERALS, NOT ELSEWHERE CLASSIFIED--The value of shipments of the clay, ceramic, and refractory minerals, n.e.c., industry in 1954 (excluding mines operated as part of manufacturing plants) was \$13,504 thousand. Principal expenses of this industry included \$3,823 thousand for wages and salaries, \$1,621 thousand for supplies and minerals received for preparation, \$1,061 thousand for fuel and electric energy, and \$1,190 thousand for contract work. The cost of purchased machinery installed was \$1,161 thousand. Employment in this industry averaged over 1,100. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$1,852 thousand. The total horsepower of equipment available for use was 58 thousand. Water intake for use during the year was 267 million gallons.

The 30,738 thousand tons of common clay and shale and miscellaneous clays net shipments and production for use in associated manufacturing establishments in 1954 was nearly one and two-thirds times as large as production in 1939. Man-hours used to produce such clays increase by about one-third between 1939 and 1954, while wages paid to produce these clays more than quadrupled over the same period. Common clay and shale and miscellaneous clay mines were operated in 47 States and the District of Columbia in 1954, with Ohio, California, Texas, Pennsylvania, and Indiana the leading States; although in 9 States all such clay mines were operated as part of manufacturing establishments.

The "Clay, ceramic, and refractory minerals, not elsewhere classified" industry represents establishments primarily engaged in mining, milling, or otherwise preparing ceramic or refractory minerals, not elsewhere classified, such as common clay and shale (for cement and structural clay products such as brick, hollow structural tile, architectural terra cotta, roofing tile, and sewer pipe), aplite, andalusite, dumortierite, kyanite, nepheline syenite, pinite, olivine, topaz, and zircon. (See also description of kaolin and ball clay industry.) Establishments producing common clay and shale in conjunction with the manufacture of structural clay products are classified in the manufacturing Major Group 32, Stone, Clay, and Glass Products. Mines producing such clays as the principal product which were parts of manufacturing establishments in 1954 were included in the following manufacturing industries: "Cement, hydraulic," "Brick and hollow tile," "Floor and wall tile, except quarry tile," "Sewer pipe," "Clay refractories," "Structural clay products, not elsewhere classified," and "Pottery products, not elsewhere classified." In 1939, all such mines were classified in the common clay and shale industry. Nearly 85 percent of all common clay and shale and miscellaneous clays were mined in 1954 at such manufacturing establishments. Selected statistics for such mines are included in Tables 1 and 3 of this report, but not in Table 2.

GENERAL--These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Clay, Ceramic, and Refractory Minerals," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years.

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development) Table 1. --PRINCIPAL STATISTICS FOR THE CLAY, CERAMIC, AND REFRACTORY MINERALS (EXCEPT FELDSPAR) INDUSTRIES, IN THE UNITED STATES: 1954, 1939, 1929, AND 1919

| production and less than \$2,000 tor cost of develo | opment) | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------------|---------------|-------------------------------------------------------|------------------------------------------------------------------------------|-------|--------------------------|-------------------------|-------------------------|----------------------|
| | Bentonite industry | industry | | Fire clay industry | Industry | | | Fuller's earth industry | th industry | |
| | | | | 1954 | | | | | | |
| Item | 1954 | 19391 | Total | Mines and plants classified in the fire clay industry | Mines included in estab- lishments classified in manufac- turing industries² | 1939 | 1954 | 1939 | 1929 | 1919 |
| Gross shipments of primary products 2 | 1,636 | 223 | 4,468 | 4,468 | :. | | 309 | 186 | 270 | (NA) |
| Quantity produced and consumed at the same establishment in the manufacture of clay, ceramic, and refractory productsdo | : | : | 3,957 | : | 3,957 | 4,101 | : | : | : | : |
| Value of shipments ³ , total\$1,000 | 21,830 | 1,982 | 22,205 | 22,205 | : | 7,178 | 6,012 | 2,107 | 4,812 | 2,019 |
| Primary products of the industrydo | 21,659 | 1,895 | 20,808 | 20,808 | :: | 6,796 | 5,985 | 2,025 | 4,811 | 2,019 |
| Value added in mining4do | 16,350 | 1,463 | (NA) | 17,467 | (NA) | 6,168 | 4,179 | 1,402 | 3,589 | 1,372 |
| Number of employees, total ⁵ | 634 | 419 | (NA) | 1,988 | (NA) | 3,910 | 564 | 678 | 1,096 | 873 |
| Production and development workers. | 578 56 | 357 | (NA) (NA) | 1,803 | (NA) | 3,655 | 510 | 562 116 | 991 | 824 |
| Man-hours worked by production and development workers | 1,340 | 687 | 5,542 | 3,123 | 2,419 | 5,642 | 1,109 | 1,051 | (NA) | (NA) |
| Principal expenses, total\$1,000 | 7,653 | 396 | (NA) | 176,11 | (NA) | 4,875 | 3,563 | 1,451 | 2,379 | 1,282 |
| Wages of production and development workersdo Salaries of all other employeesdo | 1,916 | 309 | 9,783 (NA) | 5,670 | (NA) | 3,366 | 1,381 | 438 | 853 | 541 94 |
| Supplies and minerals received for do. preparation do. Fuel. Purchased electric energy. Contract work. | 2,916 468 305 1,829 | 396. 559 386. | 7,519 | 2,146 636 305 1,686 | 2,746 | 622 | 840 538 218 223 | 374 164 95 72 | 425 385 62 351 | 338 294 6 9 |
| Purchased machinery installeddo | 604 | (NA) | (NA) | 1,292 | (NA) | (NA) | 539 | (NA) | (NA) | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment only)do | 642 | (NA) | (NA) | 1,327 | (NA) | (NA) | 525 | (NA) | (NA) | (NA) |
| For machinery and equipment onlydo | 246 | 103 | (NA) | 1,064 | (NA) | 153 | 177 | 89 | 86 | (NA) |
| Horsepower rating of power equipment71,000 | 34 | 7 | (NA) | 101 | (NA) | 32 | 23 | 15 | ₩ | m |
| Water intake 8 | 12 | (NA) | (NA) | 157 | (NA) | (NA) | 51 | (NA) | (NA) | (NA) |
| For footnotes, see end of table. | | | | | | | | | | |

| | Kaol | flad bas al | Kaolin and ball clay industry | | Magne | Magnesite and brucite industry | ucite indu | stry | Clay, c | Clay, ceramic, and refractory minerals, not elsewhere classified industry | efractory mine sified industa | rals, |
|-------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------|------------|--------------------------------|------------------------|------------------------------|----------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------|
| | | 1954 | | | | | | | | 1954 | | |
| Item | Total | Mines and plants classified in the kaclin and ball clay | Mines included in estab- lishments classified in manufac- turing industries ² | 19391 | 1954 | 1939 | 1929 | 1919 | Total | Mines and plants classified in the clay, ceramic, and refractory minerals, n.e.c., industry | Mines included in estab- lishments classified in mamufac- turing industries ² | 19392 |
| Gross shipments of primary 1,000 short tons. | 2,111 | 2,111 | | | 337 | 188 | 86 | (NA) | 4,087 | 4,087 | 251 | |
| Quantity produced and consumed at the same establishment in the manufacture of elay. ceramic, and refractory productsdo | 105 | : | 105 | 7,010 | : | : | : | : | 25,803 | ' <u>:</u> | 25,803 | 1016,035 |
| Value of shipments, total\$1,000 | 31,892 | 31,892 | : | 7,239 | 1,655 | 1,396 | 2,044 | 2,138 | 13,751 | 13,504 | 247 | 6,480 |
| Primary products of the industrydo | 31,160 | 31,160 | :: | 97,033 | 1,655 | 1,396 | 2,044 | 2,138 | 13,156 | 12,909 | 247 | 10 6, 297 183 |
| Value added in mining | (NA) | 25,249 | (NA) | 5,437 | 1,372 | 1,289 | 1,448 | 1,490 | (NA) | 9,783 | (NA) | 5,123 |
| Number of employees, total ⁵ | (NA) | 3,148 | (NA) | 3,434 | 132 | 228 | 378 | 486 | (NA) | 1,149 | (NA) | 3,066 |
| Production and development workers | (NA) | 2,820 | (NA) (NA) | 3,168 | 121. 11 | 216 | 351 | 448 38 | (NA) | 1,053 | (NA) | 2,989 |
| Man-hours worked by production and development workers. | 6,205 | 6,159 | 97 | 5,987 | 237 | 437 | (NA) | (NA) | 7,375 | 2,174 | 5,201 | 5,646 |
| Principal expenses, total\$1,000 | (NA) | 18,276 | (NA) | 4,269 | 822 | 431 | 1,150 | 1,395 | (NA) | 8,235 | (NA) | 4,343 |
| Wages of production and development workersdo | 8,174 (NA) | 8,115 | 59 (NA) | 1,830 | 469 | 300 | 988 | 652 | 11,574 (NA) | 3,412 411 | 8,162 (NA) | 2,861 125 (|
| Supplies and minerals received for do- preparation 6 Thel. do | 8,366 | 4,590 1,524 1,524 1,362 | 33 | 896 530 241 135 | 212 32 32 | 8,11 | 252 231 57 56 | 301 258 38 38 51 | 10,620 | 1,621 1,212 389 1,190 | 6,208 | 647 392 219 99 |
| Purchased machinery installeddodo | (NA) | 2,601 | (NA) | (NA) | 17 | (NA) | (NA) | (NA) | (NA) | 1,161 | (NA) | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment only)do | (NA) | 4,291 | (NA) | (NA) | 17 | (NA) | (NA) | (NA) | (NA) | 1,852 | (NA) | (NA) |
| For machinery and equipment onlydo | (NA) | 2,733 | (NA) | 1,017 | 17 | 39 | \$ | (NA) | (NA) | 1,105 | (NA) | 250 |
| Horsepower rating of power equipment71,000 | (NA) | 97 | (NA) | 33 | 17 | 2 | e. | n | (NA) | 58 | (NA) | 63 |
| Water intake 8 | (NA) | 3,890 | (NA) | (NA) | 1,051 | (NA) | (NA) | (NA) | (NA) | 267 | (NA) | (NA) |

M. Not available.

1. For 1959, stabilshments primarily producing "Rotary drilling muds" were classified in the "Maolin and ball clay" industry. For 1954, all clays were classified by type rather than a stabilshments primarily producing rotary drilling were probably classified in the "Bentonite" and "Clay, ceramic, and refractory minerals, n.e.c.", industries included.

2. Fragues for years prior to 1954 represent production.

2. Fragues for years prior to 1954 represent production.

3. Fragues for years prior to 1954 represent years and the search of supplies, minerals received for properties of this ments and search and long and preparing the primary products of these industries, products, performing services for 1959, in development of mineral properties.

3. Represents an average of 12 monthly figures for the payroll ending mearest the 15th of acad month, were producting other products, performing services for the respectance of 1954, in development of mineral properties.

3. Represents and "Clay, ceramic, and refractory minerals, n.e.c.," industries received for preparation.

3. Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

3. Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

3. Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

3. Fraguescents chock were intake from publicly and privately owned systems, and mine water used for mineral preparation.

3. Fraguescents contain and belling mud, amounting to 117 thousand tons valued at \$4.12 thousand, see footnote 1.

4. Industries are not a valued and the clays and dumortherite only. Separate figures are not available for 1939 for other clays and related products classified in this successions.

| | | | | | | <u> </u> | |
|----------|--------------------------------------------------------------|------------------------------|-------------------------------------------------------|--------------|---------------------------------------------|---------------------|-----------------------------------------------------------------|
| | | | | Numb | er of employe | es³ | |
| Line no. | Industry, Division, and State | Value of shipments (\$1,000) | Value added in mining ² (\$1,000) | Total | Production and development workers | All other employees | Man-hours worked by production and development workers (1,000) |
| | BENTONITE INDUSTRY | | | | | | |
| 1 | United States, total | 21,830 | 16,350 | 634 | 578 | 56 | 1,340 |
| | West North Central and South Central | ŕ | · | | | | |
| 2 | MississippiTexas | 3,047 1,866 | 2,281 1,175 | 146 90 | 139 80 | 7 10 | 306 188 |
| 4 | South Dakota, Louisiana, and Oklahoma | 3,195 | 1,901 | 114 | 104 | 10 | 262 |
| 5 | West | 12,943 | 10,389 | 210 | 185 | 25 | 424 |
| 6 | Wyoming. Colorado, Arizona, Nevada, and California | 779 | 604 | 74 | 70 | 4 | 160 |
| | FIRE CLAY INDUSTRY | | | | | | |
| 7 | United States, total | 22,205 | 17,467 | 1,988 | 1,803 | 185 | 3,123 |
| 8 | Middle Atlantic New Jersey | 691 | 500 | 115 | 97 | 18 | 221 |
| 9 | Pennsylvania. | 5,436 | 4,664 | 606 | 554 | 52 | 896 |
| 10 | North Central Ohio. | 7,503 | 6,103 | 430 | 389 | 41 | 747 |
| 11 12 | Missouri | 3,021 | 1,893 884 | 242 | 220 73 | 22 | 399 141 |
| 12 | Indiana, Illinois, Michigan, and Minnesota | 1,211 | 004 | 77 | () | * | 141 |
| 13 | South Kentucky | 1,105 | 969 | 260 | 238 | 22 | 303 |
| 14 15 | Alabama Maryland, West Virginia, South Carolina, Georgia, | 884 | 707 | 66 | 61 | 5 | 106 |
| | and Texas | 575 | 434 | 46 | 40 | 6 | 74 |
| 16 | Mountain (Montana, Idaho, Colorado, Utah, and Nevada) | 749 | 549 | 80 | 76 | 4 | 138 |
| 17 | Pacific (Washington and California) | 1,030 | 764 | 66 | 55 | 11 | 98 |
| | FULLER'S EARTH INDUSTRY | | | | | | |
| 18 | United States, total | 6,012 | 4,179 | 564 | 510 | 54 | 1,109 |
| 19 | South Atlantic (Georgia and Florida) | 5,362 | 3,679 | 495 | 447 | 48 | 981 |
| 20 | South Central and West Texas | 138 | 115 | 11 | 10 | 1 | 17 |
| 21 | Tennessee, Mississippi, Utah, and California | 512 | 385 | 58 | 53 | 5 | וווי |
| | KAOLIN AND BALL CLAY INDUSTRY | | | = | | | |
| 22 | United States, total | 31,892 | 25,249 | 3,148 | 2,820 | 328 | 6,159 |
| 23 | Middle Atlantic and South Atlantic South Carolina | 4,104 | 3,009 | 413 | 366 | 47 | 758 |
| 24 25 | Georgia. Pennsylvania, North Carolina, and Florida | 20,021 | 16,486 860 | 2,057 251 | 1,828 | 229 | 4,075 518 |
| ~5 | South Central | 2,372 | 000 | 2,71 | 2.72 | | 510 |
| 26 27 | Kentucky. Tennessee | 1,363 2,458 | 1,078 1,783 | 83 | 80 178 | 3 23 | 190 381 |
| 28 | Alabama, Mississippi, and Arkansas | 587 | 407 | 201 37 | 31 | 6 | 60 |
| 29 | West (Wyoming, Utah, and California) | 1,967 | 1,626 | 106 | 95 | 11 | 177 |
| | CLAY, CERAMIC, AND REFRACTORY MINERALS, N.E.C. INDUSTRY | | | | | | |
| 30 | United States, total | 13,504 | 9,783 | 1,149 | 1,053 | 96 | 2,174 |
| 31 | Northeast New Jersey | 825 | 586 | 58 | 52 | 6 | 102 |
| 32 33 | Pennsylvania. Maine, New Hampshire, and New York | 871 410 | 554 340 | 59 58 | 49 53 | 10 5 | 107 107 |
| | Contractor and of table | | - 70 | , , | , , , | | Page 6 of 10 |

| - | | | | | | | | | | | | | |
|---|--------------------------|--------------------------------------------------------------|------------------------------------------|--------------------------------------------------|-------------------|---------------------------------|---------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------|------------------------------------------------------|----------------|
| | | | Principal | expenses (\$ | 1,000) | | | | Capital ex | penditures | | | |
| | Total | Wages of production and develop- ment workers | Salaries of all other employees | Supplies and minerals received for prepara- tion | Fuel | Purchased electric energy | Contract work | Purchased machinery installed (\$1,000) | Develop- ment work, construc- tion, machinery, and equipment only | For machinery and equipment only | Horsepower rating of power equipment ⁴ | Water intake ⁵ (million gallons) | Line no. |
| | | | | | | | | - | | | | | |
| | 7,653 | 1,916 | 219 | 2,916 | 468 | 305 | 1,829 | 604 | 642 | 546 | 34 | 12 | 1 |
| | 1,159 940 1,734 | 388 218 401 | 22 39 38 | ⁶ 633 362 ⁶ 1,114 | 86 28 98 | 30 31 83 | (⁶) 262 (⁶) | 98 105 (D) | 81 97 (D) | 71 ,89 (D) | 6 3 | 10 | 2 3 4 |
| ŀ | 3,372 448 | 655 254 | 107 13 | 1,040 52 | 220 36 | 159 2 | 1,191 | 234 (D) | 290 (D) | 226 (D) | 19 4 | 1 | 5 |
| | 740 | 234 | ~ | | 50 | _ | | | (2) | (2) | | | 0, |
| | 11,371 | 5,670 | 928 | 2,146 | 636 | 305 | 1,686 | 1,292 | 1,327 | 1,064 | 101 | 157 | 7 |
| | 572 2,720 | 336 1,729 | 62 243 | ⁶ 114 399 | 43 74 | 17 83 | (⁶) 192 | 34 174 | 17 150 | 5 109 | 5 20 | 70 6 | 8 9 |
| | 3,167 1,788 614 | 1,416 603 275 | 270 101 8 | 761 354 97 | 121 277 37 | 116 40 9 | 483 413 188 | 313 219 180 | 394 175 184 | 308 143 176 | 26 21 6 | 51 16 | 10 11 12 |
| | 843 387 | 5 91 182 | 107 26 | ⁶ 128 152 | 12 7 | 5 13 | (6) | 43 18 | 52 20 | 41 14 | 4 3 | | 13 14 |
| | 256 | 102 | 22 | 6 99 | 23 | 10 | (6) | 33 | 24 | 8 | 5 | ••• | . 15 |
| | 428 596 | 219 217 | 13 76 | 30 112 | 19 23 | 7 5 | 140 163 | 54 224 | 50 261 | 40 220 | 3 | 9 | 16 17 |
| | 3,563 | 1,381 | 363 | 840 | 538 | 218 | 223 | 539 | 525 | 441 | 23 | 51 | 18 |
| | 3,210 | 1,212 | 340 | 761 | 495 | 203 | 199 | 386 | 361 | 313 | 21 | 30 | 19 |
| | 55 298 | 30 139 | 2 21 | 19 60 | 4 39 | 15 | 24 | 153 | 164 | 128 | 2 | 21 | 20 21 |
| | 18,276 | 8,115 | 1,828 | 4,590 | 1,524 | 857 | 1,362 | 2,601 | 4,291 | 2,733 | 97 | 3,890 | 22 |
| | 2,247 12,044 1,084 | 916 5,523 504 | 244 1,301 36 | 704 2,947 197 | 257 944 101 | 111 608 78 | 15 721 168 | 159 2,202 (D) | 151 3,887 (D) | 134 2,428 (D) | 20 55 6 | 7 2,683 1,154 | 23 24 25 |
| | 594 1,234 313 | 265 445 | 24 135 | 6235 411 | 59 110 | 11 32 | (6) 101 (6) | 41 89 | 61 68 | 41 20 | 5 8 | 43 | 26 27 |
| | 760 | 87 375 | 44 | 6129 164 | 9 | 9 | 160 | 19 (D) | (D) | 19 (D) | 1 2 | 3 | 28 |
| | | | | | | | | | | | | | |
| | 8,235 | 3,412 | 411 | 1,621 | 1,212 | 389 | 1,190 | 1,161 | 1,852 | 1,105 | 58 | 267 | 30 |
| | 435 556 272 | 181 184 176 | 16 39 29 | 6184 203 622 | 20 43 36 | 34 23 9 | (<u>\$</u>) 64 (6) | (D) 8 (D) | (D) 24 (D) | (D) 22 (D) | 1 6 4 | 3 1 1 | 31 32 33 |
| | | | | | | | | | | | | | |

Page 7 of 10

| | | | | Numb | er of employed | es ³ | |
|-------------|---------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------|-----------|---------------------------------------------|------------------------|-----------------------------------------------------------------|
| Line no. | Industry, Division, and State | Value of shipments (\$1,000) | Value added in mining ² (\$1,000) | Total | Production and development workers | All other employees | Man-hours worked by production and development workers (1,000) |
| | CLAY, CERAMIC, AND REFRACTORY MINERALS, N.E.C., INDUSTRYContinued | | | | | | |
| 1 | United StatesContinued | | | | | | |
| 1 | East North Central (Ohio, Indiana, Illinois, Michigan, and Wisconsin) | 1,163 | 753 | 87 | 87 | ••• | 169 |
| ٤ | South Dakota, Nebraska, and Kansas) | 1,636 | 1,135 | 115 | 106 | 9 | 254 |
| 3 4 5 | South Atlantic Virginia. North Carolina District of Columbia, West Virginia, South | 1,318 655 | 887 513 | 115 59 | 100 55 | 15 4 | 223 129 |
| | Carolina, Georgia, and Florida | 1,320 | 1,138 | 151 | 136 | 15 | 258 |
| 6 | East South Central (Kentucky, Tennessee, and Alabama) | 841 | 577 | 113 | 101 | 12 | 200 |
| 7 8 | West South Central Louisiana Arkansas, Oklahoma, and Texas | 1,171 1,113 | 1,061 742 | 81 83 | 79 72 | 2 11 | 160 177 |
| 9 | Mountain (Montana, Idaho, Colorado, New Mexico, Arizona, and Utah) | 537 | 357 | 34 | 33 | 1 | 60 |
| 10 11 | Pacific California. Washington and Oregon. | 1,193 451 | 815 325 | 104 32 | 100 30 | 4 2 | 165 63 |

D Withheld to avoid approximately disclosing figures of individual companies.

1Represents value of shipments of products primary to each industry and value of secondary products and services.

2See table 1, footnote 4.

3See table 1, footnote 5.

| | | Principal | L expenses | (\$1,000) | | | | Capital exp | enditures | | | |
|----------------------|--------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------|------------|---------------------------------|-------------------------|--------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------|-----------------------------------------------|------------------------------------------------------|-------------|
| Total | Wages of production and develop- ment workers | Salaries of all other employees | Supplies and minerals received for prepara- tion | Fuel | Purchased electric energy | Contract work | Purchased machinery installed (\$1,000) | Develop- ment work, construc- tion, machinery, and equipment only | For machinery and equipment only | Horsepower rating of power equipment | Water intake ⁵ (million gallons) | Line no. |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 700 | 290 | | 123 | 166 | 68 | 53 | 125 | 125 | 117 | 8 | 30 | 1 |
| 1,006 | 443 | 45 | 125 | 238 | 38 | 117 | 103 | 120 | 93 | 6 | 20 | 2 |
| 799 310 | 293 154 | 82 15 | 6274 6106 | 74 30 | 76 5 | (6) (6) | 88 5 | 81 4 | 75 4 | 5 3 | 46 102 | 3 4 |
| 532 | 281 | 65 | 689 | 59 | 38 | (6) | 37 | 41 | 37 | 6 | 17 | 5 |
| 604 | 300 | 36 | 96 | 59 | 23 | 90 | 25 | 29 | 24 | 3 | 20 | 6 |
| 668 686 | 218 245 | 9 50 | 6306 138 | 108 161 | 27 18 | (6) 74 | (D) | (D) (D) | (D) (D) | 2 2 | 11 10 | 7 8 |
| 341 | 148 | 1 | 27 | 17 | ••• | 148 | 68 | 80 | 58 | 4 | 1 | 9 |
| 1,071 2 55 | 380 119 | 14 10 | 80 666 | 147 54 | 24 6 | 426 (⁶) | 629 (D) | 928 (D) | 628 (D) | 7 1 | 3 2 | 10 11 |

⁴See table 1, footnote 7.
5See table 1, footnote 8.
6The cost of contract work is included with the cost of supplies.

| | | 1954 | | 1939 pro | duction1 |
|----------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------|--------------------------------------------|-----------------------|--------------------|
| Item | Quantity produced and consumed at the same establishment in the manufacture of | Net shipm interplant | | Quantity | Value f.o.b. |
| | clay, ceramic, and refractory products (1,000 short tons) | Quantity (1,000 short tons) | Value f.o.b. mine or plant (\$1,000) | (1,000 short tons) | (\$1,000) |
| Bentonite | | 1,477 | 21,161 | 226 | 1,926 |
| Fire clay | 3,957 | 4,790 | 21,664 | 4,300 | 7,143 |
| Fuller's earth | | 311 | 6,029 | 186 | 2,025 |
| Kaolin | 40 | 1,807 | 27,263 | 754 | 5,610 |
| Ball clay | 64 | 308 | 3,907 | 131 | 947 |
| Magnesite and brucite | | 337 | 1,635 | 189 | 1,398 |
| Common clay and shale | 25,803 | 4,547 | 11,367 | ³ 18,894 | ³ 7,631 |
| Aplite | | 332 | 1,006 | ן | |
| Zirconium concentrates | | 20 | 1,029 | 418 | 4219 |
| Olivine and kyanite concentrates | | 36 | 1,318 | ļ | |

¹Includes production from establishments too small to come within the scope of the 1939 minerals census. This output consisted primarily of common clay and shale amounting to 1,289 thousand tons valued at \$397 thousand; fire clay, 40 thousand tons valued at \$64 thousand; kaolin, ball clay, and rotary drilling mud, approximately 3 thousand tons at \$9 thousand; and bentonite, about 2 thousand tons at \$7 thousand.

²Represents shipments and interplant transfers less clay received from other establishments for preparation.

³Represents common clay, shale, and rotary drilling muds. These drilling muds, which were classified by type for 1954 and only partly as common clay, amounted in 1939 to 119 thousand tons valued at \$420 thousand.

⁴Represents kyanite, andalusite, dumortierite, and miscellaneous special clays.

1954 Census of Mineral Industries

June 1956 Series: MI-14-5-2

FELDSPAR

The value of shipments of the feldspar industry in 1954 was \$6,670 thousand. The principal expenses of the industry included \$1,722 thousand for wages and salaries, \$1,842 thousand for supplies and minerals received for preparation, \$540 thousand for fuel and purchased electric energy, and \$365 thousand for contract work. The cost of purchased machinery installed was \$294 thousand. Employment in the industry averaged 616. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$408 thousand. The total horsepower of equipment available for use in the industry was 29 thousand and total water intake for use during the year was 1,211 million gallons.

The 711 thousand long tons of crude feldspar produced in 1954 represented nearly a 160 percent increase since 1939, the year covered by the preceding Census of Mineral Industries. Employment in the feldspar industry increased by only one-tenth between 1939 and 1954, while horsepower of power equipment available in 1954 was almost five times as great as in 1939.

The feldspar industry as defined in the Standard Industrial Classification represents establishments primarily engaged in mining, milling, or otherwise preparing feldspar. Establishments engaged in grinding feldspar which do not include a mine are classified in the manufacturing industry, "Minerals and earths: ground or otherwise treated."

Establishments in the feldspar industry in 1954 were located in 11 States with North Carolina the leading State. A very small quantity of crude feldspar ore, 79 long tons, valued at \$3 thousand was imported from Canada in 1954.

Separate statistics are shown in this release for marketable crude feldspar, feldspar flotation concentrates, and ground feldspar produced by establishments classified in the mineral industries; and for ground feldspar produced by establishments classified in the manufacturing industries. Net shipments figures representing feldspar available to consumers in industries other than the feldspar industry are also shown. About 75 percent of the net shipments of feldspar in 1954 by establishments classified in the mineral industries represented ground feldspar and the remaining 25 percent was crude ore. About 85 percent of all crude feldspar produced in 1954 was prepared by establishments in the mineral industries by one or more of the following methods: crushing, screening, flotation, drying, air separation, trimming, and by dry or wet grinding. In addition, establishments classified in manufacturing industries purchased crude feldspar and prepared this material by grinding. Of the total quantity of 439 thousand short tons of ground feldspar available for consumers, about 80 percent was shipped by establishments classified in the mineral industries and the remainder by establishments classified in the manufacturing industries.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Clay, Ceramic, and Refractory Minerals;" which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U.S. Department of the Interior) in order to minimize duplication in canvassing mineral establishments. The census report form used for the feldspar industry also provided information required by the Bureau of Mines for its annual statistics on feldspar.

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.)

| Item | 1954 ¹ | 1939 ¹ | 1929 ¹ | 1919 ¹ |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Production of marketable crude feldsparLong tons | 691,991 | 214,009 | ² 204,865 | (NA) |
| Value of shipments, total\$1,000 | ³ 6,670 | 4981 | 41,935 | ⁴ 585 |
| Crude and ground feldspardodo | ³ 6,254 416 | ⁵ 933 48 | 1,917 18 | 576 9 |
| Value added in mining ⁶ do | 4,037 | 859 | 1,599 | 442 |
| Number of employees, total7 | 616 | 566 | 693 | 378 |
| Production and development workers | ·579 37 | 512 54 | 598 95 | د 34 9 29 |
| Man-hours worked by production and development workers1,000 | 1,235 | 1,016 | (NA) | (NA) |
| Principal expenses, total\$1,000 | 4,469 | 618 | 1,066 | 460 |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies and minerals received for preparationdo Fueldo Purchased electric energydo Contract workdodo | 1,523 199 1,842 238 302 365 | 383 113 81 28 8 | 527 203 239 21 62 14 | 264 53 98 21 12 |
| Purchased machinery installeddo | 294 | (NA) | (NA) | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)dd: | 408 | (NA) | (NA) | (NA) |
| For machinery and equipment onlydo | 278 | 39 | 28 | (NA) |
| Horsepower rating of power equipment ⁸ 1,000 | 29 | 6 | 7 | 2 |
| Water intake9,000,000 gallons | 1,211 | (NA) | (NA) | (NA) |

NA Not available.

¹For 1954, 1929, and 1919, includes feldspar-grinding operations where such grinding was carried on at the mine location. For 1939, excludes such feldspar-grinding operations. For years prior to 1954 excludes data for nonproducing operations.

²Represents crude and ground feldspar.

³Includes the value of crude feldspar shipped to other establishments in the "Feldspar" industry for grinding. The value of shipments of such material amounts to less than 7 percent of the total shown for "Crude and ground feldspar."

Appresents production.

Represents crude feldspar only.

⁶For 1954, represents value of products shipped plus capital expenditures less cost of supplies, minerals received for preparation, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, 1929, and 1919, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "value added," as computed for 1954, represents the value added during the year in the feldspar industry by mining and preparing feldspar, producing other products, performing services for others, and in the development of feldspar properties.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy. ⁹Represents total water intake from publicly and privately owned systems.

Table 2.--PRINCIPAL STATISTICS FOR THE FELDSPAR INDUSTRY, BY GEOGRAPHIC DIVISIONS AND STATES: 1954

| | | New England (Maine. | West | Sou | ıth | West | |
|--------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------------------|---------------------------------------|-------------------|------------------------------------|------------------|--|
| Item | United States, total | New Hampshire, and Connecticut) | North Central (South Dakota) | North Carolina | Virginia, Georgia, and Texas | and (Colifornia) | |
| Production of marketable crude feldsparLong tons | 691,991 | 54,034 | 41,706 | 523,597 | 18,267 | 54,387 | |
| Value of shipments\$1,000 | 6,670 | 1,207 | 799 | 3,536 | 331 | 7 97 | |
| Value added in mining1do | 4,037 | 846 | 501 | 2,079 | 127 | 484 | |
| Number of employees, total ² | 616 | 156 | 74 | 287 | 54 | 45 | |
| Production and development workers | 579 37 | · 139 | } 74 | { 279 8 | } 54 | 45 | |
| Man-hours worked by production and development workers | 1,235 | 312 | 180 | 542 | 110 | 91 | |
| Principal expenses, total\$1,000 | 4,469 | 892 | 545 | 2,169 | 377 | 486 | |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies and minerals received for | 1,523 199 | 419 87 | } 226 | { 637 49 | } 132 | 172 | |
| preparationdo | 1,842 | 185 | 167 | 1,105 | ³ 216 | ³ 282 | |
| Fueldo Purchased electric energydo | 238 302 | 21 74 | 55 | 172 157 | 29 | 32 | |
| Contract workdo | 365 | 106 | 97 | 49 | (3) | (³) | |
| Purchased machinery installeddo | 294 | 32 | 30 | (D) | (D) | 25 | |
| Capital expenditures (development work, construction, machinery, and equipment)do | 408 | 57 | 51 | (D) | (D) | 26 | |
| For machinery and equipment onlydo | 278 | 49 | 44 | (D) | (D) | 25 | |
| Horsepower rating of power equipment41,000 | 29 | 8 | 6 | 8 | 2 | 5 | |
| Water intake ⁵ 1,000,000 gallons | 1,211 | | ••• | 1,211 | ••• | ••• | |

 $^{^{\}mathrm{D}}\!_{\mathrm{Withheld}}$ to avoid approximately disclosing figures of individual companies.

Table 3 .-- QUANTITY AND VALUE OF FELDSPAR IN THE UNITED STATES: 1954 AND 1939

| Item | Unit of measure | Quantity | Value f.o.b. mine or plant (\$1,000) | |
|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------|--------------------------------------------|--|
| Ore mined and processed at establishments classified in the "Feldspar" industry and in other mineral industries | | 19 | 254 | |
| Production Marketable crude fëldspar Feldspar flotation concentrates ¹ Ground feldspar | Long tons do. Short tons | 711,103 193,822 349,769 | ••• | |
| Shipments and interplant transfers Crude feldspar, total ² | Long tons do. | 161,360 143,773 17,587 | 1,172 1,045 127 | |
| Ground feldspar | Short tons | 349,607 | 5,233 | |
| Crude ore prepared which was produced at the same establishment | Long tons | 552,163 61,774 | 430 | |
| Net shipments and interplant transfers, total3 | do. | ⁴ 411,735 | 5,975 | |
| Crude feldspar, total | do. do. do. | 99,586 81,999 17,587 | 742 615 127 | |
| Ground feldspar | Short tons | 349,607 | 5,233 | |
| Ore processed at establishments classified in the manufacturing industries Shipments and interplant transfers (ground feldspar) | do. | 89,871 | 1,503 | |
| | | 1939 | | |
| Production ⁵ | Long tons | 274,684 | 1,177 | |

¹All feldspar flotation concentrates were further processed (ground) at the establishment at which produced. No shipments or interplant transfers of feldspar flotation concentrates were reported.

²Represents marketable crude feldspar not milled at the establishment at which produced.

³Represents "Shipments and interplant transfers" less "Crude ore received from other establishments for preparation."

⁴Represents 99,586 long tons of crude feldspar and 312,149 long tons of ground feldspar.

⁵Represents crude feldspar mined. Includes 58,340 tons, valued at \$234 thousand, from establishments too small to come widthin the score of the 1039 minerals capsus

See table 1, footnote 6.
See table 1, footnote 7.
The cost of contract work is included with the cost of supplies.
See table 1, footnote 8.
See table 1, footnote 9.

within the scope of the 1939 minerals census. Page 4 of 4

1954 Census of Mineral Industries

March 1956 Series: MI-14-6

NATURAL ABRASIVES; PUMICE AND PUMICITE

NATURAL ABRASIVES.—The value of shipments of the natural abrasives industries in 1954 was \$3,485 thousand. Principal expenses included \$883 thousand for wages and salaries, \$466 thousand for supplies, \$194 thousand for fuel and electric energy, and \$136 thousand for contract work. The cost of purchased machinery installed was \$75 thousand. Employment in these industries averaged 217. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$313 thousand. The total horsepower of equipment available for use was 10 thousand. Water intake for use during the year, including mine water, was 98 million gallons.

The total tonnage of natural abrasives produced in 1954 was about 75 percent larger than production in 1939, the year covered by the preceding Census of Mineral Industries. Employment in the natural abrasives industries decreased by one-half between 1939 and 1954, while available horsepower of power equipment doubled between 1939 and 1954. Establishments primarily producing natural abrasives in 1954 were located in 12 States, with New York the leading State. Imports of natural abrasives in 1954 were valued at \$49 million. Virtually all of these imports consisted of industrial diamonds imported from the United Kingdom and the Belgian Congo.

Two natural abrasives industries are recognized in the Standard Industrial Classification of the Bureau of the Budget (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949.) The first of these industries is "Abrasive stones, natural" which represents establishments primarily engaged in mining, quarrying, or shaping at the quarry, grindstones, pulpstones, millstones, burrstones, and sharpening stones (such as oilstones, whetstones, and scythestones). The second of these industries is "Natural abrasives, except sand, not elsewhere classified," which represents establishments primarily engaged in mining, quarrying, milling, or otherwise preparing natural abrasives, not elsewhere classified, such as tripoli, emery, garnet, corundum, and industrial diamonds. Establishments primarily engaged in the production of blast, grinding, or polishing sand are classified in the "Sand and gravel" industry, and those primarily engaged in the production of diatomite in the "Miscellaneous nonmetallic minerals, not elsewhere classified" industry. The value of shipments of the natural abrasives stones industry in 1954 was \$326 thousand, and this industry had an average of only 42 employees. The value of shipments of the natural abrasives, not elsewhere classified, industry in 1954 was \$3,159 thousand and employment averaged 175.

PUMICE AND PUMICITE--The value of shipments of the pumice and pumicite industry in 1954 was \$3,158 thousand. Principal expenses included \$856 thousand for wages and salaries, \$312 thousand for supplies and minerals received for preparation, \$149 thousand for fuel and electric energy, and \$207 thousand for contract work. The cost of purchased machinery installed was \$208 thousand. Employment in the industry averaged 244. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$325 thousand. The total horsepower of equipment available for use in the industry was 24 thousand. Water intake for use during the year, including mine water, was 27 million gallons.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

The 1,866 thousand tons of pumice and pumicite produced in 1954 was nearly twenty-two times as large as production in 1939, the year covered by the preceding Census of Mineral Industries. Employment in the industry doubled between 1939 and 1954, while horsepower of power equipment available in 1954 was twelve times as large as in 1939. Establishments primarily producing pumice and pumicite in 1954 were located in 15 States. (This preliminary report does not include statistics for establishments located in Hawaii.) However, about 65 percent of the pumice and pumicite produced was from California and New Mexico. Imports of crude pumice and pumicite in 1954 amounted to 21 thousand tons valued at \$117 thousand, most of which was imported from Italy and Greece.

The "Pumice and pumicite" industry as defined in the Standard Industrial Classification of the Bureau of the Budget (see reference above under "Natural abrasives") represents establishments primarily engaged in mining, quarrying, milling, or otherwise preparing pumice and pumicite (volcanic ash).

GENERAL--These statistics are derived from preliminary tabulations of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures on natural abrasives will appear in the Census bulletin, "Natural Abrasives, Except Sand," and on pumice and pumicite in the Census bulletin, "Miscellaneous Nonmetallic Minerals." These bulletins will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries. The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years.

Table 1 .-- PRINCIPAL STATISTICS FOR THE NATURAL ABRASIVES AND PUMICE AND PUMICITE INDUSTRIES, IN THE UNITED STATES: 1954 AND 1939 (Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939, less than \$2,500)

| | Na | tural abrasi | Pumice and pumicite industry | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------|-----------------------------------------------------------------|--------------------------------------------|---------------------------------------|------------------------------------|
| | | 1954 | | | | |
| Item | Natural abrasives, total | Abrasive stones, natural, industry | Natural abrasives, except sand, n.e.c., industry | 1939 ¹ | 1954 | 1939 ¹ |
| Value of shipments\$1,000 | ² 3,485 | ² 326 | ² 3,159 | ³ 1,335 | 43,158 | ³ 387 |
| Value added in mining ⁵ do | 2,927 | 236 | 2,691 | 1,115 | 2,607 | 301 |
| Number of employees, total ⁶ | 217 | 42 | 175 | 443 | 244 | 127 |
| Production and development workers | 196 21 | 42 | 154 21 | 383 60 | 211 33 | 122 5 |
| Man-hours worked by production and development workers1,000 | 403 | 78 | 325 | 797 | 411 | 198 |
| Principal expenses, total\$1,000 | 1,679 | 222 | 1,457 | 699 | 1,524 | 212 |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies and minerals received for preparationdo Pueldo Purchased electric energydo Contract workdo | 719 164 466 161 33 136 | 132 31 10 49 | 587 164 435 151 33 87 | 346 133 ⁷ 149 50 21 | 688 168 312 109 40 207 | 119 7 745 30 11 (Z) |
| Purchased machinery installeddo | 75 | (D) | (D) | (NA) | 208 | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 313 | (D) | (D) | (NA) | 325 | (NA) |
| For machinery and equipment onlydo | 74 | (D) | (D) | 58 | 195 | 13 |
| Horsepower rating of power equipment ⁸ 1,000 | 10 | 1 | 9 | 5 | 24 | 2 |
| Water intake9 | 98 | (D) | (D) | (NA) | 27 | (NA) |

DWithheld to avoid approximately disclosing figures of individual companies.

shipments. See table 3 for detailed statistics on products.

Represents value of products.

Represents value of products.

Represents punice and punicite and, in addition, secondary products and services amounting to less than one percent of the total value of shipments. See table 3 for detailed statistics on products.

For 1954, represents value of products shipped plus capital expenditures less cost of supplies, minerals received for preparation, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "Value added," as computed for 1954, represents the value added during the year by mining and preparing the primary products of these industries (natural abrasives and pumice and pumicite), producing other products, performing services for others, and in development of mineral properties.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Tacludes the cost of minerals received for preparation.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

Prepresents total water intake from publicly and privately owned systems, and mine water used for mineral preparation.

NA_{Not} available.

ZLess than \$500. ¹The 1939 figures for the "Natural abrasives" industry, as published in the 1939 Census of Mineral Industries volumes, included establishments primarily engaged in producing pumice and pumicite, but excluded establishments primarily engaged in producing tripoli. The 1939 figures have been retabulated for use in this release to represent for the "Natural abrasives" industries the combined statistics for the 1939 industries "Natural abrasives" and "Tripoli," adjusted to exclude figures for establishments primarily engaged in producing pumice and pumicite. The 1939 figures for the "Pumice and pumicite" industry are shown separately.

Represents natural abrasives and, in addition, secondary mineral products amounting to less than one percent of the total value of

| Natural abrasives industries Pumice and pumicite industry | | | | | | | | | | |
|----------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------|------------------------|-----------------------------|--|
| | | East and | | | | Mountain | | Pacific | | |
| Item | United States, total | North Central (New Hampshire, New York, Pennsyl- vania, Ohio, Indiana, Illinois, and Minnesota) | (Arkansas, Oklahoma, Texas, Idaho, and | United States, total | West North Central and West South Central (Nebraska, Kansas, Oklahoma, and Texas) | New Mexico | Montana, Idaho, Wyoming, Colorado, Arizona, Utah, and Nevada | California | Washington and Oregon | |
| Value of shipments ¹ \$1,000 | 3,485 | 2,222 | 1,263 | 3,158 | 213 | 1,043 | 642 | 1,041 | 219 | |
| Value added in mining ² do | 2,927 | 1,719 | 1,208 | 2,607 | 118 | 850 | 564 | 897 | 178 | |
| Number of employees, total ³ | 217 | 185 | 32 | 244 | 25 | 64 | 34 | 103 | 1.8 | |
| Production and development workers All other employees | 196 21 | 169 16 | 27 5 | 211 33 | } 25 | { 53 | 34 | 87 16 | } 18 | |
| Man-hours worked by production and development workers1,000 | 403 | 344 | 59 | 411 | 55 | 106 | 62 | 163 | 25 | |
| Principal expenses, total\$1,000 | 1,679 | 1,290 | 389 | 1,524 | 153 | 408 | 250 | 592 | 121 | |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies and minerals received | 719 164 | 612 106 | 107 58 | 688 168 | } 58 | { 169 38 | } 121 | { 300 115 | } 55 | |
| for preparationdo | 466 | 375 | 91 | 312 | 1 | ر ⁴ 152 | 35 | 4132 |) | |
| Fueldo | 161 33 | 165 | 29 | { 109 40 | 77 | 38 | 18 | 32 13 | 25 | |
| Contract workdo | 136 | 32 | 104 | 207 | 18 | (4) | 71 | 13 (⁴) | 41 | |
| Purchased machinery installeddo | 75 | 27 | 48 | 208 | 55 | 37 | 40 | 38 | 38 | |
| Capital expenditures (development work, construction, machinery, and equipment)do | 313 | 96 | 217 | 325 | 55 | 45 | 91 | 71 | 63 | |
| For machinery and equipment onlydo | 74 | 26 | 48 | 195 | 55 | 28 | 38 | 37 | 37 | |
| Horsepower rating of power equipment ⁵ 1,000 | 10 | 9 | 1 | 24 | 1 | 5 | 6 | 9 | 3 | |
| Water intake ⁶ 1,000,000 gallons | 98 | (D) | (D) | 27 | | ••• | | 27 | ••• | |

 $[\]mathbf{D}_{\text{Withheld}}$ to avoid approximately disclosing figures of individual companies.

Table 3.--QUANTITY AND VALUE OF NATURAL ABRASIVES AND PUMICE AND PUMICITE: 1954 AND 1939

(Includes production in the "Abrasive stones, natural" industry; the "Natural abrasives (except sand), n.e.c.," industry; the "Pumice and pumicite" industry and also production as secondary products in other mineral industries and in the manufacturing industries.)

| | | 1954 | 1939 | | | |
|----------------------------------------------------------------------|-----------------|--------------------------|-----------------------------------------------|--------------------------|-----------------------------------------------|--|
| Product | | | nd interplant | Production | | |
| | | Quantity (short tons) | Value f.o.b. mine or plant (\$1,000) | Quantity (short tons) | Value f.o.b. mine or plant (\$1,000) | |
| Natural abrasives ¹ , total | | | 3,596 | | 1,180 | |
| Millstones, chasers, dragstones, pavers, grindstones, and pulpstones | 3,314 162 | 3,338 161 | 184 70 | 10,192 | 440 | |
| Tube-mill liners and grinding pebbles | 4,003 25,854 | 4,003 24,088 | 159 1,668 | | 308 | |
| Tripoli | 44,997 | 45,549 | 1,515 | 30,195 | 432 | |
| Pumice and pumicite | 1,866,000 | 1,865,000 | 3,274 | 86,577 | 387 | |

¹Figures for 1939 represent only natural abrasives reported by establishments classified in 1939 in the "Natural abrasives" and the "Tripoli" industries. The 1939 figures exclude natural abrasives reported by establishments classified in other industries. These were valued at less than \$25 thousand. Available tabulations do not show the identification of these abrasives by type.

Withheld to avoid approximately disclosing rigures of individual 1 See table 1, footnotes 2 and 4.
2 See table 1, footnote 5.
3 See table 1, footnote 6.
4 The cost of contract work is included with the cost of supplies.
5 See table 1, footnote 8.
6 See table 1, footnote 9.

October 1955 Series: MI-14-7-1

SULFUR

The sulfur industry shipped 5.5 million long tons of sulfur in 1954, valued at \$141 million. The principal expenses of the industry included \$19 million for wages and salaries, \$14 million for supplies, \$6 million for fuel and electric energy, and \$3 million for contract work. The cost of purchased machinery installed was \$3 million. Employment in the industry averaged almost 4 thousand. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$9 million. The total horsepower of equipment available for use in the industry was 161 thousand. Water intake for use during the year was 16 billion gallons. (See reverse for detailed statistics.)

The 1954 production of sulfur was almost three times as large as the production in 1939, the year covered by the preceding Census of Mineral Industries. Employment in the sulfur industry almost doubled between 1939 and 1954 and horsepower of power equipment more than tripled. Establishments primarily producing sulfur were located in only three States. Texas was the most important producing State, followed by Louisiana and California. Development and exploration work on sulfur properties was reported in Wyoming and Utah. Imports of crude sulfur in 1954 amounted to only a small fraction of one percent of domestic production.

The sulfur industry represents establishments primarily engaged in mining native sulfur, including the extraction of native sulfur at well operations (Frasch process), and mining and beneficiating sulfur ore. It does not include the mining of pyrites; the production of sulfur from natural gas; or the production of byproduct sulfuric acid at copper, lead, and zinc smelters, or at petroleum refineries. This definition is in accordance with the Standard Industrial Classification of the Bureau of the Budget (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949). All producing sulfur operations classified in this industry in 1954 were Frasch process well operations and open pit mines.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Chemical and Fertilizer Mineral Mining," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases will be issued for other industries within the next few months.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) to minimize duplication in canvassing mineral establishments. The census report form used for the sulfur industry also provided the information required by the Bureau of Mines for its annual statistics on sulfur from these operations.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

PRINCIPAL STATISTICS FOR THE SULFUR INDUSTRY IN THE UNITED STATES: 1954, 1939, 1929, AND 1919

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.)

| Item | 1954 | 1939 | 1929 ¹ | 1919 | |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------|--------------------------------------------|------|--------------------------------|
| Sulfur Production | 5,729 5,510 | 2,091 (NA) | 2,328 (NA) | | (NA) (NA) |
| Value of shipments, total\$1,000 | 140,685 | ² 31,812 | ² 37,126 | 2 | 17,936 |
| Sulfurdo | 140,661 | 31,802 10 | 37,032 94 | | 17,934 2 |
| Value added in mining ³ do | 124,155 | 28,863 | 29,302 | | 13,720 |
| Number of employees, total ⁴ | 3,864 | 2,024 | 2,504 | | 1,273 |
| Production and development workers | 3,077 787 | 1,517 507 | 2,199 305 | - | 1,129 144 |
| Man-hours worked by production and development workers | 6,229 | 3,031 | (NA) | | (NA) |
| Principal expenses, total\$1,000 | 42,037 | 7,405 | 12,262 | | 6,311 |
| Wages of production and development workersdo Salaries of all other employeesdo. Suppliesdo. Fueldo. Purchased electric energydo. Contract workdo. | 14,619 4,846 14,055 5,640 44 2,833 | 2,545 1,911 1,690 1,128 15 | 3,483 955 3,340 4,433 41 10 | | 1,682 413 1,452 2,764 |
| Purchased machinery installeddo | 2,803 | (NA) | (NA) | | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 8,845 | (NA) | (NA) | | (NA) |
| For machinery and equipment onlydo | 2,666 | 297 | 1,634 | | (NA) |
| Horsepower rating of power equipment ⁵ ,000 | 161 | 45 | 34 | | 15 |
| Water intake ⁶ ,000,000 gallons | 15,969 | (NA) | (NA) | | (NA) |

NA Not available.

Includes statistics for pyrites. Pyrites, however, represented less than 2 percent of the value of products.

²Represents value of products.

^{*}Represents value of products.

3For 1954, represents value of products shipped plus capital expenditures less cost of supplies, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, 1929, and 1919, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work.

4Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

5Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

6Represents total water intake from publicly and privately owned systems.

May 1956

Series:

MI-14-7-2

BARITE

The value of shipments of the barite industry in 1954 was \$18,269 housand. The principal expenses of the industry included \$3,874 thousand for wages and salaries, \$2,251 thousand for supplies and minerals received for preparation, \$879 thousand for fuel and purchased electric energy, and \$850 thousand for contract work. The cost of purchased machinery installed was \$1,250 thousand. Employment in the industry averaged 1,125. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$1,012 thousand. The total horsepower of equipment available for use in the industry was 67 thousand and total water intake for use during the year, including mine water, was 6,047 million gallons.

The 960 thousand tons of crude barite produced in 1954 represented nearly a threefold increase since 1939, the year covered by the preceding Census of Mineral Industries. Employment in the barite industry increased by nearly one-third between 1939 and 1954, while horsepower of power equipment available in 1954 was nearly seven times as great as in 1939.

The barite industry as defined in the Standard Industrial Classification represents establishments primarily engaged in mining, milling, or otherwise preparing crude barite. Establishments engaged in grinding barite which do not include a mine are classified in the manufacturing industry, "Minerals and earths: ground or otherwise treated."

Establishments in the barite industry in 1954 were located in 10 States with Arkansas and Missouri the leading States. Imports of crude barite ore amounted to 317 thousand tons, valued at \$2,275 thousand, over one-half of which was imported from Canada.

Separate statistics are shown in this release for crude, crushed, and ground barite (including flotation concentrates) produced by establishments in the mineral industries and for crushed and ground barite produced by establishments in the manufacturing industries. Net shipments figures representing barite available to consumers in industries other than the barite industry are also shown. Nearly half of the net shipments of barite in 1954 represented ground barite; almost 30 percent was crude ore; and the remainder was crushed barite. About 90 percent of all crude barite produced in 1954 was prepared by establishments in the mineral industries by one or more of the following methods: washing, crushing, gravity concentrating, grinding, drying, screening, flotation, air separation, magnetic separation, and jigging. In addition, establishments classified in manufacturing industries purchased crude or crushed barite and prepared this material by crushing or grinding. Of the total quantity of 1,245 thousand tons of crushed and ground barite available for consumers, slightly more than half was shipped by establishments classified in the mineral industries and the remainder by establishments classified in the manufacturing industries. Of the latter shipments, it is estimated that approximately 50 percent of the ground barite was produced from imported crude barite ore.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Chemical and Fertilizer Mineral Mining," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries. The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

Table 1.--PRINCIPAL STATISTICS FOR THE BARITE INDUSTRY IN THE UNITED STATES: 1954, 1939, 1929, AND 1919

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.)

| Item | 1954 | 1939 ¹ | 1929 ¹ | 1919 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------|
| | | | | |
| Net shipments of bariteShort tons | ² 902,875 | ³ 348,022 | 4271,503 | (NA) |
| Value of shipments, total\$1,000 | 18,269 | ³ 2,065 | 41,802 | 41,574 |
| Baritedodo | 18,269 | { 2,010 55 | 1,794 8 | 1,556 18 |
| Value added in mining5do | 14,051 | 1,652 | 1,489 | 1,276 |
| Number of employees, total ⁶ | 1,125 | 854 | 915 | 978 |
| Production and development workers | 1,036 89 | 792 62 | 844 71 | 919 59 |
| Man-hours worked by production and development workers | 2,403 | 1,439 | (NA) | (NA) |
| Principal expenses, total | 7,854 | 1,165 | 1,147 | 1,177 |
| Wages of production and development workers do Salaries of all other employees do Supplies and minerals received for preparation do Fuel do. Purchased electric energy do. Contract work do | 3,451 423 2,251 327 552 850 | 597 155 246 94 52 21 | 648 186 155 58 76 24 | 769 110 219 50 19 |
| Purchased machinery installeddo | 1,250 | (NA) | (NA) | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 1,012 | (NA) | (NA) | (NA) |
| For machinery and equipment onlydo | 910 | 96 | 154 | (NA) |
| Horsepower rating of power equipment ⁸ ,000 | 67 | 10 | 6 | 3 |
| Water intake9 | 6,047 | (NA) | (NA) | (NA) |

NA Not available.

Excludes barite grinding operations at mines, which are included for 1954 and may be included for 1919.

²For 1954, represents net shipments of crude, crushed, and ground barite. Net shipments are "Shipments and interplant transfers" less "Crude ore received from other establishments for preparation." (See Table 3.) This figure includes a small amount of crude and ground barite, amounting to less than 1 percent of the total, shipped by establishments in mineral indus-

tries other than the "Barite" industry.

3For 1939, represents production of crude barite for shipment without preparation and production of prepared barite, principally by washing, jigging, and tabling.

4Represents production.

For 1954, represents value of products shipped plus capital expenditures less cost of supplies and minerals received for preparation, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, 1929, and 1919, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "value added," as computed for 1954, represents the value added during the year in the barite industry by mining and preparing barite, producing other products, performing services for others, and in development of barite properties.

6Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

⁷Figures for 1939, 1929, and 1919 exclude the cost of minerals received for preparation.

8Represents the horsepower of all prime movers plus the horsepower of electric motor driven by purchased energy.

Represents total water intake from publicly and privately owned systems, and mine water used for mineral preparation.

| Item · | United States, total | West North Central (Missouri) | South (South Carolina, Georgia, Tennessee, and Arkansas) | West (Montana, Idaho, Arizona, Nevada, and California) |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------|----------------------------------------------------------|--------------------------------------------------------------------------|
| Production of crude barite ¹ Short tons | 959,898 | 319,030 | 459,879 | 180,989 |
| Value of shipments\$1,000 | 18,269 | 3,416 | 13,628 | 1,225 |
| Value added in mining ² do | 14,051 | 2,381 | 10,967 | 703 |
| Number of employees, total ³ | 1,125 | 379 | 687 | 59 |
| Production and development workers | 1,036 89 | 379 | { 625 62 | } 59 |
| Man-hours worked by production and development workers | 2,403 | 853 | 1,413 | 137 |
| Principal expenses, total\$1,000 | 7,854 | 2,133 | 4,918 | 803 |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies and minerals received for preparationdo Fueldo Contract workdodo | 3,451 423 2,251 327 552 850 | } 1,137 578 139 204 75 | { 2,176 296 1,521 167 321 437 | 265 152 21 27 338 |
| Purchased machinery installeddo | 1,250 | 205 | 1,006 | 39 |
| Capital expenditures (development work, construction, machinery, and equipment)do | 1,012 | 166 | 791 | 55 |
| For machinery and equipment onlydo | 910 | 156 | 720 | 34 |
| Horsepower rating of power equipment ⁴ 1,000 | 67 | 26 | 36 | 5 |
| Water intake ⁵ 1,000,000 gallons | 6,047 | 4,777 | (D) | (D) |

Pwithheld to avoid approximately disclosing figures of individual companies.

Includes a small quantity of crude barite, amounting to less than 2 percent of total United States production, produced by establishments in mineral industries other than the "Barite" industry.

See table 1, footnote 5.

See table 1, footnote 6.

See table 1, footnote 8.

See table 1, footnote 9.

| Item | Quantity (short tons) | Value, f.o.b. mine or plant (\$1,000) | |
|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------|--|
| | 1954 | | |
| Ore mined and ore processed at establishments classified in the "Barite" industry and in other mineral industries Production Crude barite ore | 959,898 | | |
| Crushed barite | 628,268 444,729 | ::: | |
| Crude ore prepared which was produced at the same establishment $^2\dots$ | 856,769 | ••• | |
| Net shipments and interplant transfers, total ³ | 902,875 | 18,299 | |
| Crude barite ore | 264,784 192,964 445,127 | 2,553 2,085 13,661 | |
| Ore processed at establishments classified in the manufacturing industries Shipments and interplant transfers (crushed and ground barite) | 4607,064 | 4 17 , 092 | |
| | 19 | 39 | |
| Production ⁵ | 376,288 | 2,187 | |

¹Establishments classified in mineral industries other than the "Barite" industry shipped only crude barite ore and ground barite (including flotation concentrates).

preparation was equivalent to less than one-half of one percent of total crude ore produced.

*Crushed barite accounted for less than 3 percent of the quantity of shipments and less than 2 percent of value of shipments. It is estimated that about 50 percent of the ground barite shipped by these establishments was produced from

imported crude barite ore.

Represents crude barite for shipment without preparation and barite prepared principally by washing, jigging, and tabling; ground barite is excluded. Includes 28,266 tons, valued at \$176 thousand, from establishments too small to come within the scope of the 1939 minerals census.

² Includes 219,702 tons of barite which was processed only by one or more of the following methods: washing, gravity concentrating, screening, sorting, and jigging. Shipments of this material are shown as crude barite ore.

3 Represents "Shipments and interplant transfers" less "Crude ore received from other establishments for preparation." These two items could not be shown separately without approximately disclosing figures for individual companies. However, net shipments differ very little from shipments and interplant transfers since crude ore received from other establishments for

March 1956 Series: MI-14-7-3

FLUORSPAR

The value of shipments of the fluorspar industry in 1954 was \$15,040 thousand. The principal expenses of the industry included \$4,495 thousand for wages and salaries, \$2,164 thousand for supplies, \$1,585 thousand for fluorspar received for preparation, \$994 thousand for fuel and purchased electric energy, and \$813 thousand for contract work. The cost of purchased machinery installed was \$556 thousand. Employment in the industry averaged almost 1,200. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$738 thousand. The total horsepower of equipment available for use in the industry was 49 thousand and total water intake for use during the year, including mine water, was 1,081 million gallons.

The 252 thousand tons of net shipments of fluorspar in 1954 was one and one-quarter times as large as production in 1939, the year covered by the preceding Census of Mineral Industries. Employment in the fluorspar industry decreased by about one-seventh between 1939 and 1954, but horsepower of power equipment available in 1954 was two and one-third times as great as in 1939.

Establishments primarily producing fluorspar in 1954 were located in nine States. However, over 85 percent of net shipments of fluorspar were from establishments in Illinois, Colorado, and Kentucky. The remainder was shipped from Nevada, New Mexico, Montana, Utah, California, and Arizona. Imports of fluorspar in 1954 amounted to 318 thousand tons, nearly half of which was imported from Mexico.

Separate statistics are shown in this release for crude ore, crushed fluorspar, and ground fluorspar (including flotation concentrates). By subtracting figures for "Crude ore received from other establishments for preparation" from "Shipments and interplant transfers," net shipments were computed, representing fluorspar available to consumers in other industries. Over 80 percent of the net shipments in 1954 represented ground fluorspar and flotation concentrates; about 15 percent was crushed fluorspar; and the remainder was crude ore. Over 95 percent of all crude fluorspar produced in 1954 was prepared by one or more of the following preparation methods: crushing, washing, drying, screening, flotation, grinding, or gravity concentrating.

The fluorspar industry represents establishments primarily engaged in mining, milling, or otherwise preparing fluorspar. This definition is in accordance with the Standard Industrial Classification of the Bureau of the Budget (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949).

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Chemical and Fertilizer Mineral Mining," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries. The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

Table 1.--PRINCIPAL STATISTICS FOR THE FLUORSPAR INDUSTRY IN THE UNITED STATES: 1954, 1939, 1929, AND 1919

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.)

| Item | · 1954 . | | 1929 | 1919 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------|
| Net shipments of fluorspar ¹ Short tons | 251,603 | 202,367 | 156,095 | (NA) |
| Value of shipments\$1,000 | ² 15,040 | 33,398 | ³ 2,858 | ³ 3,335 |
| Value added in mining4do | 9,666 | 2,656 | 2,038 | 2,391 |
| Number of employees, total ⁵ | 1,187 | 1,396 | 1,171 | 1,243 |
| Production and development workers | 969 218 | 1,287 109 | 1,053 118 | 1,124 119 |
| Man-hours worked by production and development workers1,000 | 1,944 | 2,568 | (NA) | (NA) |
| Principal expenses, total\$1,000 | 10,051 | 2,104 | 2,222 | 2,435 |
| Wages of production and development workers. do Saleries of all other employees. do Supplies. do Fluorspar received for preparation. do Fuel. do Purchased electric energy do Contract work. do | 3,348 1,147 2,164 1,585 487 507 813 | 1,134 228 506 (NA) 118 61 57 | 1,112 290 626 (NA) 153 24 17 | 1,196 295 635 (NA) 163 |
| Purchased machinery installeddo | 556 | (NA) | (NA) | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 738 | (NA) | (NA) | (NA) |
| For machinery and equipment onlydo | 460 | 456 | 140 | (NA) |
| Horsepower rating of power equipment ⁶ | 49 | 21 | 7 | 7 |
| Water intake ⁷ ,000,000 gallons | 1,081 | (NA) | (NA) | (NA) |

NA Not available.

lfor 1954, represents net shipments of crude, crushed, and ground fluorspar. Net shipments are "Shipments and interplant transfers" less "Crude ore received from other establishments for preparation" (see table 3). For 1939, represents production of cleaned or concentrated fluorspar recovered from crude fluorspar milled during that year. For 1929, represents production.

Represents value of fluorspar shipped to establishments outside of the "Fluorspar industry"; value of fluorspar shipped to other establishments in the "Fluorspar industry"; value of secondary products, chiefly lead and zinc concentrates; value of electric energy generated and sold; and receipts for services performed for others.

Represents value of production.

[&]quot;For 1954, represents value of products shipped plus capital expenditures, less cost of supplies, fluorspar received for preparation, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, 1929, and 1919, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "Value added," as computed for 1954, represents the value added during the year in the fluorspar industry by mining and preparing fluorspar, products are products. producing other products, performing services for others, and in development of fluorspar properties.

*Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

Represents total water intake from publicly and privately owned systems, and mine water used for mineral preparation.

| | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-------------------------------------|-----------------------------------------------|----------------------------|---------------------------------------------------------------------------|
| | | | | Wes | st |
| | United States, total | East North Central (Illinois) | East South Central (Kentucky) | Colorado | Montana, New Mexico, Arizona, Utah, Nevada, and California |
| Net shipments of fluorspar'1Short tons | 251,603 | 101,729 | 29,604 | 84,162 | 36,108 |
| Value of shipments, total\$1,000 | 15,040 | 8,043 | 1,595 | 3,643 | 1,759 |
| Net shipments of fluorspar ¹ do Other shipments and services ² do | 12,496 2,544 | 6,180 1,863 | 1,595 | 3,643 | 1,759 |
| Value added in mining ³ do | 9,666 | 5,361 | 792 | 2,336 | 1,177 |
| Number of employees, total ⁴ | 1,187 | 668 | 192 | 219 | 108 |
| Production and development workers | 969 218 | 535 133 | 166 26 | 186 33 | 82 26 |
| Man-hours worked by production and development workers1,000 | 1,944 | 1,013 | 336 | 415 | 180 |
| Principal expenses, total\$1,000 | 10,051 | 5,153 | 1,450 | 2,370 | 1,078 |
| Wages of production and development workersdo Salaries of all other employeesdo Suppliesdo Fluorspar received for preparationdo | 3,348 1,147 2,164 1,585 487 | 1,678 706 1,921 214 | 522 134 { ⁵ 254 426 71 | . 822 182 51,072 | 326 125 429 47 |
| Fueldo, Purchased electric energydo Contract workdo | 507 813 | 293 341 | 43 (⁵) | 139 (5) | 32 119 |
| Purchased machinery installeddo | 556 | 300 | 41 | 154 | 61 |
| Capital expenditures (development work, construction, machinery, and equipment)do | 738 | 387 | 32 | 213 | 106 |
| For machinery and equipment onlydo | 460 | 259 | 27 | 113 | 61 |
| Horsepower rating of power equipment61,000 | 49 | 26 | 6 | 9 | 8 |
| Water intake71,000,000 gallons | 1,081 | 650 | 59 | 281 | 91 |

Table 3.--PRODUCTION, SHIPMENTS, AND RECEIPTS OF FLUORSPAR IN THE FLUORSPAR INDUSTRY IN THE UNITED STATES: 1954

| Item | Quantity (short tens) | Value, f.o.b. mine or plant (\$1,000) |
|------------------------------------------------------------------------------------------------------|------------------------------|---------------------------------------------|
| Production Crude fluorspar ore Crushed fluorspar Ground fluorspar (including flotation concentrates) | 629,054 36,882 204,198 | |
| Shipments and interplant transfers Crude fluorspar ore | 106,508 39,089 204,882 | 1,753 1,107 11,221 |
| Crude ore prepared which was produced at the same establishment 1 | 516,673 | |
| Crude ore received from other establishments for preparation | 98,876 | 1,585 |
| Net shipments, total ² | 251,603 | 12,496 |
| Crude fluorspar ore | 7,632 39,089 204,882 | 168 1,107 11,221 |

¹Includes 9 thousand tons of ore which was only sorted. Shipments of this material are shown as "Crude fluorspar ore."

²Represents "Shipments and interplant transfers" less "Crude ore received from other establishments for preparation." Not more than one percent of the shipments of crushed fluorspar was transferred for grinding at other establishments in the "Fluorspar industry."

¹See table 1, footnote 1.
²Represents value of fluorspar shipped to other establishments in the "Fluorspar industry" for preparation; value of secondary products, chiefly lead and zine concentrates; value of electric energy generated and sold; and receipts for services performed for others.
³See table 1, footnote 4.
⁴See table 1, footnote 5.
⁵The cost of contract work is included with the cost of supplies.
⁶See table 1, footnote 6.
⑦See table 1, footnote 7.

DEPARTMENT OF COMMERCE BUREAU OF THE CENSIJS WASHINGTON 25, D. C.

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, \$300

October 1955 Series: MI-14-7-4

POTASH, SODA, AND BORATE MINERALS

The value of shipments of the potash, soda, and borate minerals industry in 1954 amounted to \$108 million. The principal expenses of the industry included \$32 million for wages and salaries, \$17 million for supplies and minerals received for preparation, \$7 million for fuel and electric energy, and \$2 million for contract work. The cost of purchased machinery installed was \$8 million. Employment in the industry averaged 6 thousand. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$9 million. The total horsepower of equipment available for use in the industry was 187 thousand. Water intake for use during the year, including mine water, was 11 billion gallons.

The 1954 production of potassium salts represented a sixfold increase since 1939, the year covered by the preceding Census of Mineral Industries. Production of natural sodium and boron compounds in 1954 represented a threefold increase since 1939. Employment in the potash, soda, and borate minerals industry more than doubled between 1939 and 1954 and horsepower of power equipment more than tripled.

Establishments primarily producing potash, soda, and borate minerals were located in only five States. Value of shipments in New Mexico amounted to \$65 million, compared with \$35 million for California and \$8 million for combined shipments in Texas, Wyoming, and Utah. All establishments in New Mexico were primarily engaged in producing potash, whereas all establishments in California were primarily engaged in producing soda and borate minerals. Imports of potash materials in 1954 amounted to less than 7 percent of domestic production, coming principally from Germany, France, and Spain.

The potash, soda, and borate minerals industry represents establishments primarily engaged in mining natural potassium, sodium, or boron compounds (other than common salt). Products of the industry include potash salts, sodium borates (borax, kernite, ulexite), sodium carbonates (soda ash, trona), sodium sulfates (Glauber's salt), and colemanite. This definition is in accordance with the Standard Industrial Classification of the Bureau of the Budget (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949). Over 95 percent of the total tonnage of the compounds listed above was produced in 1954 in the potash, soda, and borate minerals industry, with the remainder produced as secondary products at establishments classified in the industrial inorganic chemicals and cement industries. The value of shipments of muriate of potash in 1954 amounted to \$65 million; sulfate of potash to \$6 million; sodium carbonate, \$14 million; sodium sulfate, \$4 million; and boron compounds, \$15 million.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Chemical and Fertilizer Mineral Mining," which will be published and offered forsale by the Superintendent of Documents in the near future. Similar preliminary and final releases will be issued for other industries within the next few months.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) to minimize duplication in canvassing mineral establishments. The census report form used for the potash, soda, and borate minerals industry also provided the information required by the Bureau of Mines for its annual statistics on these minerals.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

Table 1.--PRINCIPAL STATISTICS FOR THE POTASH, SODA, AND BORATE MINERALS INDUSTRY IN THE UNITED STATES: 1954 AND 1939

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939, less than \$2,500.)

| Item | 1954 | 1939 ¹ |
|-----------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------|
| Value of shipments ² \$1,000 | 107,752 | 17,031 |
| Value added in mining ³ do | 82,210 | 13,330 |
| Number of employees, total ⁴ | 6,168 | 2,438 |
| Production and development workers | 4,736 1,432 | 2,049 389 |
| Man-hours worked by production and development workers | 9,359 | 4,388 |
| Principal expenses, total\$1,000 | 58,562 | 8,457 |
| Wages of production and development workers | 23,024 9,466 17,328 5,594 1,640 1,510 | 3,445 1,311 2,036 1,425 198 42 |
| Purchased machinery installeddo | 8,390 | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 8,920 | (NA) |
| For machinery and equipment onlydo | 6,932 | 691 |
| Horsepower rating of power equipment ⁵ | 187 | 61 |
| Water intake ⁶ ,1,000,000 gallons | 10,561 | (NA) |

NA Not available.

¹Figures for 1939 represent combined statistics for the 1939 industries: "Potash" and "Natural Sodium Compounds." Represents potash; crude and prepared soda and borate minerals; other products and services; and electric energy generated and sold. For 1939, the figure represents value of production. In 1954, the value of crude minerals shipped to other establishments for preparation, other products and services, and electric energy generated and sold amounted to less than 5 percent of the total "Value of shirments" for the industry.

3For 1954, represents value of products shipped plus capital expenditures less cost of supplies and minerals received for

preparation, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work.

"Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy. ⁶Represents total water intake from publicly and privately owned systems, and mine water used for mineral preparation.

Table 2.--PRINCIPAL STATISTICS FOR THE POTASH, SODA, AND BORATE MINERALS INDUSTRY, FOR GEOGRAPHIC DIVISIONS AND STATES: 1954

| | United States, | West Sout and Mou | Pacific | |
|-----------------------------------------------------------------------------------|-----------------|-------------------------|--------------------------------|---------------------------|
| Item | total | New Mexico ² | Texas, Wyoming, and Utah | (California) ¹ |
| Value of shipments ³ \$1,000 | 107,752 | 64,746 | 8,351 | 34,655 |
| Value added in mining4do | 82,210 | 51,777 | 6,132 | 24,301 |
| Number of employees, total ⁵ | 6,168 | 3,439 | 544 | 2,185 |
| Production and development workers | 4,736 1,432 | 2,787 652 | 400 144 | 1, <i>5</i> 49 636 |
| Man-hours worked by production and development workers | 9,359 | 5,429 | 809 | 3,121 |
| Principal expenses, total\$1,000 | 58,562 | 32,411 | 4,907 | 21,244 |
| Wages of production and development workersdo | 23,024 9,466 | 14,626 4,998 | 1,858 764 | 6,540 3,704 |
| Supplies and minerals received for preparationdo Contract workdodo | 17,328 1,510 | 9,631 1,046 | 1,912 | 6,249 |
| Fueldo Purchased electric energydo | 5,594 1,640 | 1,118 992 | 319 54 | 4,157 594 |
| Purchased machinery installeddodo. | 8,390 | 5,238 | 274 | 2,878 |
| Capital expenditures (development work, construction, machinery, and equipment)do | 8,920 | 5,056 | 340 | 3,524 |
| For machinery and equipment onlydo | 6,932 | 3,549 | 255 | 3,128 |
| Horsepower rating of power equipment ⁶ 1,000 | 187 | 84 | 23 | 80 |
| Water intake ⁷ | 10,561 | 4,498 | 560 | 5,503 |

¹All establishments in California were primarily engaged in producing soda and borate minerals.

²All establishments in New Mexico were primarily engaged in producing potash minerals. No soda or borate minerals were Fall establishments in New produced in New Mexico.

3See table 1, footnote 2.

See table 1, footnote 3.

See table 1, footnote 4.

See table 1, footnote 5.

7See table 1, footnote 6.

(Includes production in the "Potash, soda, and borate minerals" industry and also production as secondary products in the manufacturing industries)

| , | | 1954 | | 1939 | |
|-------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------------------------|------------------------------|-----------------------------------------------|
| | Production | Shipmer interplant | nts and transfers | Produ | etion |
| Product | (1,000 short tons) | 1,000 short tons | Value f.o.b. mine or plant (\$1,000) | 1,000 short tons | Value f.o.b. mine or plant (\$1,000) |
| Potash, soda, and borate minerals, total | ••• | ••• | 104,111 | | (NA) |
| Crude potassium salts | ¹ 9,975 1,986 | (AA) (AA) | (NA) | (NA) (NA) | (NA) |
| Prepared potassium salts, total | 3,323 1,949 | 3,270 1,918 | 71,832 | 532 312 | 10,138 |
| Muriate of potash, including manure salts | 3,033 1,849 289 100 | 2,986 1,821 284 97 | 65,500 6,332 | (NA) (NA) (NA) (NA) | (AA) (AA) |
| Sodium carbonates (except borax) ² | 545 314 | 527 303 | 13,535 | ³ 125 (NA) | ³ 1,529 |
| Sodium sulfates ⁴ Na ₂ SO ₄ equivalent | 252 251 | 251 249 | 3,883 | ³ 137 (NA) | ³ 1,028 |
| Boron compounds ⁵ | 543 202 | 556 208 | 14,861 | ³ 245 (NA) | ³ 5,690 |

NA Not available.

Provided the second sec

represents soda ash, bicarbonate, and trona.

Sold or used by producers as reported by the Bureau of Mines, U. S. Department of the Interior.

For 1954, represents natural anhydrous sodium sulfate, salt cake, and Glauber's salt; no burkeite was produced in 1954.

For 1959, represents natural salt cake, Glauber's salt, and burkeite.

For 1954, represents borax; and natural boric acid, colemanite, kernite, ulexite, sodium tetraborate anhydrous, sodium tetraborate pentahydrate, and sodium pentaborate. For 1939, represents borax, boric acid, colemanite, kernite, and ulexite.

December 1955 Series: MI-14-7-5

PHOSPHATE ROCK

The value of shipments of the phosphate rock industry in 1954 was \$118 million. The principal expenses of the industry included \$22 million for wages and salaries, \$12 million for supplies, \$35 million for phosphate rock received for preparation, \$9 million for fuel and electric energy, and \$3 million for contract work. The cost of purchased machinery installed was \$8 million. Employment in the industry averaged over 5,400. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$11 million. The total horsepower of equipment available for use in the industry was 356 thousand. Water intake for use during the year, including mine water, was 63 billion gallons.

The 13 million tons of net shipments of phosphate rock in 1954 was over three times as large as production in 1939, the year covered by the preceding Census of Mineral Industries. Employment in the phosphate rock industry increased by almost one-half between 1939 and 1954, while horsepower of power equipment available in 1954 was more than three times as great as in 1939. Establishments primarily producing phosphate rock in 1954 were located in six States. However, about three-quarters of all net shipments of phosphate rock were from Florida. The other producing States in order of net shipments were Tennessee, Idaho, Montana, Wyoming, and Utah. Imports of phosphate rock in 1954 amounted to 122 thousand long tons valued at \$3.1 million, most of which was imported from Curacao.

Separate statistics are shown in this release for crude ore or matrix, washed phosphate rock, and dried phosphate rock. By subtracting figures for "Receipts from other establishments for preparation" from "Shipments and interplant transfers," net shipments are computed which represent phosphate rock available to consumers in other industries. About 80 percent of the net shipments in 1954 represented dried rock, about 15 percent was crude ore or matrix, and only about 5 percent was in the form of washed rock. Over 95 percent of all crude phosphate ore or matrix produced in 1954 was prepared by crushing, grinding, milling, sizing, washing, flotation, drying, calcining, nodulizing, or defluorinating, Nearly all of the Florida rock was prepared, whereas less than half of the rock from other States received preparation.

The phosphate rock industry represents establishments primarily engaged in mining, milling, drying, or otherwise preparing phosphate rock, including apatite. This definition is in accordance with the Standard Industrial Classification of the Bureau of the Budget (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949).

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Chemical and Fertilizer Mineral Mining," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases will be issued for other industries within the next few months. The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

Table 1.--PRINCIPAL STATISTICS FOR THE PHOSPHATE ROCK INDUSTRY IN THE UNITED STATES: 1954, 1939, 1929, AND 1919

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.)

| Item | 1954 | 1939 | 1929 | 1919 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------|----------------------------------------------|
| Net shipments of phosphate rock11,000 long tons | 13,366 | 3,958 | 3,829 | 1,989 |
| Value of shipments\$1,000 | ² 117,853 | ³ 12,286 | ³ 13,044 | ³ 10,300 |
| Value added in mining4do | 62,020 | 9,003 | 9,497 | 6,155 |
| Number of employees, total ⁵ | 5,439 | 3,754 | 3,506 | 4,747 |
| Production and development workers | 4,578 861 | 3,372 382 | 3,201 305 | 4,373 374 |
| Man-hours worked by production and development workers | 10,127 | 6,680 | (NA) | (NA) |
| Principal expenses, total | 80,542 | 7,012 | 7,629 | 8,807 |
| Wages of production and development workers do Salaries of all other employees do Supplies do Phosphate rock received for preparation do Fuel do. Purchased electric energy do. Contract work do | 17,067 4,440 11,916 35,393 3,364 5,507 2,835 | 2,871 858 1,503 (NA) 826 931 23 | 3,304 778 1,543 (NA) 891 1,092 | 3,901 761 2,162 (NA) 1,740 79 |
| Purchased machinery installeddo | 8,156 | (NA) | (NA) | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 11,338 | (NA) | (NA) | (NA) |
| For machinery and equipment onlydo | 7,771 | 470 | 805 | (NA) |
| Horsepower rating of power equipment ⁶ 1,000 | 356 | 113 | 104 | 50 |
| Water intake ⁷ ,1,000,000 gallons | 62,618 | (NA) | (NA) | (NA) |

NA Not available.

¹For 1954, represents net shipments of crude, washed, and dried phosphate rock. Net shipments are "Shipments and interplant transfers" less "Receipts from other establishments for preparation" (see table 3). For 1939, represents production of washed phosphate rock and crude phosphate rock mined but not prepared in that year; for 1929 and 1919, represents phosphate

rock mined.

Represents value of phosphate rock shipped to establishments outside of the "Phosphate rock industry"; value of phosphate rock shipped to other establishments in the "Phosphate rock industry"; value of secondary products; and receipts for services performed for others.

Represents value of production.

For 1954, represents value of products shipped plus capital expenditures less cost of supplies, phosphate rock received for preparation, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, 1929, and 1919, represents value of production less cost of supplies, fuel, purchased electric energy, and contract work.

*Represents the average of 12 monthly figures for the payroll ending nearest the 15th of each month.

*Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

*Transports total water intelled from mubiliary and privately council evidence and mine water used for mineral preparation.

Represents total water intake from publicly and privately owned systems, and mine water used for mineral preparation.

| Item | United States, total | South Atlantic (Florida) | East South Central (Tennessee) | Mountain (Montana, Idaho, Wyoming, and Utah) |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------|--------------------------------------|-------------------------------------------------------------|
| Net shipments of phosphate rock11,000 long tons | 13,366 | 9,620 | 2,147 | 1,599 |
| Value of shipments, total\$1,000 | 117,853 | 94,323 | 14,502 | 9,028 |
| Net shipments of phosphate rock ¹ do Other shipments and services ² do | 82,391 35,462 | 62,091 32,232 | | 9,028 |
| Value added in mining ³ do | 62,020 | 45,949 | 9,605 | 6,466 |
| Number of employees, total ⁴ | 5,439 | 3,948 | 791 | 700 |
| Production and development workers | 4,578 861 | 3,283 665 | 685 106 | 610 90 |
| Man-hours worked by production and development workers | 10,127 | 7,495 | 1,420 | 1,212 |
| Principal expenses, total\$1,000 | 80,542 | 66,264 | 7,601 | 6,672 |
| Wages of production and development workersdo Salaries of all other employeesdo Suppliesdo Phosphate rock received for preparationdo | 17,087 4,440 11,916 35,393 | 12,352 3,443 9,363 32,212 | 2,066 512 3,675. | 2,669 485 2,059 |
| Fueldo | 3,364 | 2,601 | 473 | 290 |
| Purchased electric energydo Contract workdo | 5,507 2,835 | 5,108 1,190 | 172 703 | 227 942 |
| Purchased machinery installeddo | 8,156 | 5,902 | 502 | 1,752 |
| Capital expenditures (development work, construction, machinery, and equipment)do | 11,338 | 8,002 | 628 | 2,708 |
| For machinery and equipment onlydo | 7,771 | 5,624 | 430 | 1,717 |
| Horsepower rating of power equipment ⁵ ,000 | 356 | 264 | 65 | 27 |
| Water_intake ⁶ ,000,000 gallons | 62,618 | 56,718 | 5,601 | 299 |

¹See table 1. footnote 1.

See table 1. footnote 1.

Represents value of phosphate rock (crude, washed, or dried) shipped to other establishments in the "Phosphate rock industry" for preparation; value of secondary products; and receipts for services performed for others.

See table 1, footnote 4.

See table 1, footnote 5.

See table 1, footnote 6.

See table 1, footnote 7.

Table 3.--PRODUCTION, SHIPMENTS, AND RECEIPTS OF PHOSPHATE ROCK IN THE PHOSPHATE ROCK INDUSTRY IN THE UNITED STATES: 1954

| Item | Quan (1,000 1 | Value f.o.b. | | |
|------------------------------------------------------------------------------------|----------------------------|-------------------------|----------------------------------|--|
| | Phosphate rock | P205 content | plant (\$1,000) | |
| Production | | | | |
| Crude ore or matrix. Washed rock. Dried rock. | 46,378 11,303 10,814 | 6,054 3,722 3,535 | ••• | |
| Shipments and interplant transfers Crude ore or matrix | 2,853 10,148 10,570 | 689 3,347 3,455 | 8,870 36,199 72,715 | |
| Material prepared which was produced at the same establishment Crude ore or matrix | 43,635 1,025 | 5,417 336 | ••• | |
| Receipts from other establishments for preparation Crude ore or matrix | 653 9,412 140 | 149 3,122 41 | 1,355 32,963 1,075 | |
| Net shipments, total ¹ | 13,366 | 4,179 | 82,391 | |
| Crude ore or matrix | 2,200 736 10,430 | 540 225 3,414 | 7,515 3,236 7 1,640 | |

¹Represents "Shipments and interplant transfers" less "Receipts from other establishments for preparation."

COMM-DC

Page 4 of 4

DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS WASHINGTON 25, D. C. OFFICIAL BUSINESS PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, \$300

June 1956 Series: MI-14-7-6

ROCK SALT, PYRITES, AND MISCELLANEOUS CHEMICAL AND FERTILIZER MINERAL MINING

ROCK SALT--The value of shipments of the rock salt industry in 1954 was \$35,658 thousand. Principal expenses included \$8,571 thousand for wages and salaries, \$5,351 thousand for supplies and minerals received for preparation, \$702 thousand for fuel and electric energy, and \$244 thousand for contract work. The cost of purchased machinery installed was \$1,534 thousand. Employment in this industry averaged 1,925. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$2,186 thousand. The total horsepower of equipment available for use was 48 thousand. Water intake for use during the year, including mine water, was 2,968 million gallons.

The total tonnage of rock salt produced in 1954 was almost two and one-half times as large as production in 1939, the year covered by the preceding Census of Mineral Industries. Employment in the rock salt industry increased by about one-quarter between 1939 and 1954, and available horsepower of power equipment more than doubled over the same period. Establishments primarily producing rock salt in 1954 were located in 8 States, with Louisiana and New York the leading States.

The "Rock salt" industry as defined in the Standard Industrial Classification represents establishments primarily engaged in mining, crushing, and screening rock salt. Establishments primarily engaged in producing salt from natural or artificial brines are classified in the manufacturing industry, "Salt."

CHEMICAL AND FERTILIZER MINERAL MINING, NOT ELSEWHERE CLASSIFIED--The value of shipments of establishments classified in this industry in 1954 was \$21,779 thousand. Principal expenses included \$5,811 thousand for wages and salaries, \$3,775 thousand for supplies and minerals received for preparation, \$587 thousand for fuel and electric energy, and \$439 thousand for contract work. The cost of purchased machinery installed was \$3,360 thousand. Employment in this industry averaged 1,427. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$4,455 thousand. The total horsepower of equipment available for use in the industry was 52 thousand. Water intake for use during the year, including mine water, was 14,167 million gallons.

The "Chemical and fertilizer mineral mining, not elsewhere classified" industry as defined in the Standard Industrial Classification represents establishments primarily engaged in mining, milling, or otherwise preparing chemical or fertilizer mineral raw materials, not elsewhere classified, such as arsenic minerals, lithium minerals (lepidolite, spodumene, and amblygonite), pyrites, natural mineral pigments, strontium minerals (celestite and strontianite), witherite, and guano and similar ancient natural fertilizers. Separate subindustry statistics have been tabulated for 1954 for "Pyrites."



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

Pyrites--The value of shipments of establishments primarily engaged in producing pyrites in 1954 was \$12,000 thousand. Principal expenses for these establishments included \$3,679 thousand for wages and salaries, \$2,442 thousand for supplies and contract work, and \$233 thousand for fuel and electric energy. The cost of purchased machinery installed was \$83 thousand. Employment averaged 903. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$612 thousand. The total horsepower of equipment available for use was 29 thousand. Water intake for use during the year was 985 million gallons.

The 912 thousand long tons of pyrites produced in 1954 was about three-fourths larger than production in 1939, the year covered by the preceding Census of Mineral Industries. Employment at establishments primarily engaged in producing pyrites more than quadrupled between 1939 and 1954, and available horsepower of power equipment increased almost tenfold during the same period. Establishments primarily producing pyrites in 1954 were located in 5 States, with Tennessee the leading State. Imports of pyrites in 1954 amounted to 47 thousand long tons valued at \$292 thousand, all of which was imported from Canada.

Miscellaneous Chemical and Fertilizer Minerals—The value of shipments of other minerals in the "Chemical and fertilizer mineral mining, not elsewhere classified" industry in 1954 was \$9,779 thousand. About 70 percent of this value represented establishments which recovered elemental sulfur from hydrogen sulfide in natural gas. Principal expenses included \$2,132 thousand for wages and salaries; \$1,772 thousand for supplies, minerals received for preparation, and contract work; and \$354 thousand for fuel and electric energy. The cost of purchased machinery installed was \$3,277 thousand. Employment averaged 524. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$3,843 thousand. The total horsepower of equipment available for use was 23 thousand. Water intake for use during the year, including mine water, was 13,182 million gallons.

GENERAL--These statistics are derived from preliminary tabulations of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures on rock salt, pyrites, and miscellaneous chemical and fertilizer minerals will appear in the Census bulletin, "Chemical and Fertilizer Mineral Mining." This bulletin will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) in order to minimize duplication in canvassing mineral establishments. The census report form used to collect information on pyrites also provided information required by the Bureau of Mines for its annual statistics on pyrites.

Table 1.--PRINCIPAL STATISTICS FOR THE ROCK SALT AND THE CHEMICAL AND FERTILIZER MINERAL MINING, NOT ELSEWHERE CLASSIFIED, INDUSTRIES IN THE UNITED STATES: 1954, 1939, AND 1919

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development)

| | Rock salt | industry | Chemical and fertilizer mineral mining, not elsewhere classified, industry | | | | | |
|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------|------------------------|-------------------------------------------------------------------------------|----------------------------|--------------------|---------------------------|---------------------------------------------|--|
| Item | | | | Pyrit | es subindu | stry ¹ | Miscel- laneous chemical | |
| | 1954 | 1939 | Total, 1954 | 1954 | 1939 | 1919 | and fertilizer minerals sub- industry, 1954 | |
| Value of shipments, total\$1,000 | 35,658 | ² 6,896 | 21,779 | 12,000 | ² 602 | ² 2,409 | 9,779 | |
| Primary products of the industrydo | ³ 30,769 ⁵ 4,889 | 6,896 | 21,779 | 12,000 | { 4576 26 | ⁴ 2,215 194 | 9,779 | |
| Value added in mining6do | 30,013 | 5,721 | 18,073 | 9,854 | 458 | 1,484 | 8,219 | |
| Number of employees, total ⁷ | 1,925 | 1,561 | 1,427 | 903 | 204 | 1,268 | 524 | |
| Production and development workers | 1,659 266 | 1,380 181 | 1,209 218 | 783 120 | 189 15 | 1,172 96 | 426 98 | |
| Man-hours worked by production and development workers | 3,861 | 2,608 | 2,424 | 1,447 | 348 | (NA) | 977 | |
| Principal expenses, total\$1,000 | 14,868 | 3,149 | 10,612 | 6,354 | 385 | 2,495 | 4,258 | |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies and minerals received for | 7,117 1,454 | 1,434 540 | 4,569 1,242 | 2,971 708 | 204 37 | 1,385 185 | 1,598 534 | |
| preparation do Fuel do Purchased electric energy do Contract work. do | 5,351 335 367 244 | 868 153 151 3 | 3,775 193 394 439 | 92,442 22 211 (9) | 95 7 34 8 | 616 163 59 87 | 91,772 171 183 (°) | |
| Purchased machinery installeddo | 1,534 | (NA) | 3,360 | 83 | (NA) | (NA) | 3,277 | |
| Capital expenditures (development work, construction, machinery, and equipment)do | 2,186 | (NA) | 4,455 | 612 | (NA) | (NA) | 3,843 | |
| For machinery and equipment onlydo | 1,260 | 212 | 2,825 | 83 | 15 | (NA) | 2,742 | |
| Horsepower rating of power equipment 101,000 | 48 | 23 | 52 | 29 | 3 | 7 | 23 | |
| Water intake 11 | 2,968 | (NA) | 14,167 | 985 | (NA) | (NA) | 13,182 | |

¹Comparable statistics for 1929 are not available; statistics for pyrites were included with those for sulfur for that year. ²Represents value of products.

³Represents rock salt. *Represents pyrites.

Of this total, \$4,812 thousand represents the value of evaporated salt and salt from brines. These products are clas-

sified in the manufacturing industry, "Salt."

For 1954, represents value of products shipped plus capital expenditures less cost of supplies and minerals received for preparation, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939 and 1919, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "value added," as computed for 1954, represents the value added during the year in each industry by mining and preparing the primary products of these industries, producing other products, performing services for others, and in development of mineral properties.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

⁸Figures for 1939 and 1919 exclude the cost of minerals received for preparation. ⁹The cost of contract work is included with the cost of supplies.

¹⁰ Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

11 Represents total water intake from publicly and privately owned systems, and mine water used for mineral preparation.

Table 2.--PRINCIPAL STATISTICS FOR THE ROCK SALT INDUSTRY, BY GEOGRAPHIC DIVISIONS AND STATES: 1954

| | | Middle Atlantic | West South Central and West | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------|--|--|
| Item | United States, total | North Central (New York, Michigan, and Kansas) | Louisiana | Texas, Utah, Nevada, and California | | |
| Value of shipments\$1,000 | 35,658 | 20,879 | 13,109 | 1,670 | | |
| Value added in mining1do | 30,013 | 18,555 | 10,113 | 1,345 | | |
| Number of employees, total ² | 1,925 | 926 | 855 | 144 | | |
| Production and development workers | 1,659 266 | 843 83 | 704 1 <i>5</i> 1 | 112 32 | | |
| Man-hours worked by production and development workers | 3,861 | 2,015 | 1,574 | 272 | | |
| Principal expenses, total\$1,000 | 14,868 | 7,441 | 6,544 | 883 | | |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies and minerals received for preparationdo Fueldo Purchased electric energydo Contract workdo | 7,117 1,454 5,351 335 367 244 | 4,329 583 1,978 151 253 147 | 2,330 700 ³ 3,268 246 (³) | 458 171 ³ 202 52 (³) | | |
| Purchased machinery installeddo | 1,534 | 707 | 668 | 159 | | |
| Capital expenditures (development work, construction, machinery, and equipment)do | 2,186 | 912 | 1,186 | 88 | | |
| For machinery and equipment onlydo | 1,260 | 707 | 486 | 67 | | |
| Horsepower rating of power equipment41,000 | 48 | 28 | 17 | 3 | | |
| Water intake ⁵ 1,000,000 gallons | 2,968 | (D) | 2,112 | (D) | | |

Dwithheld to avoid approximately disclosing figures of individual companies.

Table 3.--QUANTITY AND VALUE OF ROCK SALT, PYRITES, RECOVERED ELEMENTAL SULFUR, AND MISCELLANEOUS CHEMICAL AND FERTILIZER MINERALS: 1954 AND 1939

(The figures for each product in this table include production in the mineral industry to which the product is primary and, where applicable, production reported as secondary products in other mineral industries or in manufacturing industries.)

| | | | 1954 | 1939 | | |
|--------------------------------------------------------------------------|------------------|-------------|-------------|---------------------------------------------|-------------|---------------------------------------------|
| Product | Unit of | Production | | ents and int transfers | production | |
| | measure | (quantity) | Quantity | Value, f.o.b. mine or plant (\$1,000) | Quantity | Value, f.o.b. mine or plant (\$1,000) |
| Rock salt, total | 1,000 short tons | 4,971 | 4,821 | 32,962 | 2,055 | 6,900 |
| Rock salt, except pressed blocks Pressed blocks | do. do. | 4,912 59 | 4,763 58 | 31,916 1,046 | 2,011 44 | (NA) (NA) |
| Pyrites (gross weight) | 1,000 long tons | 912 | 934 | 7,665 | <i>5</i> 16 | 1,325 |
| Sulfur content | do. | 405 | 416 | | 214 | |
| Recovered elemental sulfur1 | do. | 366 | 333 | 9,341 | (NA) | (NA) |
| Miscellaneous chemical and fertilizer minerals, not elsewhere classified | ••• | | | ² 3,489 | | (NA) |

NANot available.

See table 1, footnote 6.

See table 1, footnote 6.

See table 1, footnote 7.

See table 1, footnote 9.

See table 1, footnote 10.

See table 1, footnote 11.

¹Represents sulfur (of a purity 98 percent or greater) recovered from hydrogen sulphide in natural and residue gases at establishments primarily producing such sulfur and as a secondary product at natural gas liquids plants, at petroleum refineries, and at chemical plants.

²Includes spodumene, miscellaneous sulfur-bearing materials, natural iron-oxide pigments, wollastonite, lignaceous shale, mineral soil builders, amblygonite, and bat guano.

September 1955 Series: MI-14-8

PEAT

The peat industry shipped 242 thousand tons of peat in 1954, valued at \$2,251 thousand. The principal expenses of the industry included \$912 thousand for wages and salaries, \$293 thousand for supplies, \$204 thousand for fuel and electric energy, and \$46 thousand for contract work. Expenditures of \$158 thousand were made for purchased machinery installed. Average employment in the industry was 338. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$194 thousand. The total horsepower of equipment available for use in the industry was 23 thousand.

The 1954 tonnage of peat produced represents approximately a fourfold increase since 1939, the year covered by the preceding Census of Mineral Industries. Employment in the peat industry nearly doubled between 1939 and 1954 and horsepower of power equipment increased sevenfold. In 1954, peat was produced in 20 States. Nearly 40 percent of the total production was from the North Central States, 25 percent from 4 western States, and over 15 percent from the Middle Atlantic States. Imports of peat moss in 1954 were nearly the same as total domestic peat production, amounting to 241 thousand tons. These imports came primarily from Germany and Canada.

The peat industry represents establishments primarily engaged in mining reed or sedge peat, peat humus, and peat moss; and in grinding, shredding, screening, or otherwise preparing peat. This definition is in accordance with the Standard Industrial Classification of the Bureau of the Budget (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949). In 1954, about 61 percent of the total production represented peat humus; 26 percent was reed or sedge peat; and 11 percent was moss peat. About 85 percent of all peat was prepared by pulverizing, shredding, or other processes prior to use. Almost all peat used in the United States in 1954 was for agricultural purposes.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Miscellaneous Nonmetallic Minerals," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases will be issued for other industries within the next few months.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at approximately ten year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) in order to minimize duplication in canvassing mineral establishments. The census report form used for the peat industry also provided the information required by the Bureau of Mines for its annual statistics on peat production.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

| Item | 1954 | 1939 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|------------------------------------------|
| Peat Production | 243 242 | 56 (NA) |
| Value of shipments, total\$1,000 Peat | 2,270 2,251 19 | ² 378 ² 378 |
| Value added in mineral production ³ dodo | 1,763 | 338 |
| Number of employees, total ⁴ . Production and development workers. All other employees. | 338 309 29 | 184 157 27 |
| Man-hours worked by production and development workers | 629 | 246 |
| Principal expenses, total. \$1,000. Wages of production and development workers. do. Salaries of all other employees. do. Supplies. do. Fuel. do. Purchased electric energy. do. Contract work. do. | 1,455 810 102 293 173 31 46 | 184 101 43 21 15 4 (Z) |
| Purchased machinery installeddodo | 158 | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment) | 194 127 | (NA) 18 |
| Horsepower rating of power equipment ⁵ | 23 | 3 |

NA_{Not} available.

| Table 2PRINCIPAL STATISTICS FOR THE PEAT INDUSTRY IN THE UNITED STATES, BY GEOGRAPHIC DIVISIONS AND STATES: 1954 | | | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------|-------------------|----------------------------------|---------------|--------------------------------------------------------------|----------|-------------------------|------------------|------------------------------------------|
| | | | Middle A | tlantic | North | Central | Sou | th | k | est |
| Itém . | United States, total | New England ¹ | Pennsyl- vania | New York and New Jersey | Ohio | Indiana, Illinois, Michigan, Minnesota, and Iowa | Florida | Georgia and Texas | Wash- ington | Idaho, Colorado, and California |
| Shipments of peat | 242 | 9 | 16 | 22 | 29 | 62 | 37 | 6 | 43 | 18 |
| Value of shipments\$1,000 | ² 2,270 | ² 136 | 142 | 235 | 357 | ² 813 | 168 | 74 | ² 154 | 191 |
| Value added in mineral production3do | 1,763 | 105 | 117 | 181 | 281 | 583 | 136 | 61 | 140 | , 159 |
| Number of employees, total ⁴ Production and development workers All other employees | 338 309 29 | 36 33 3 | 22 } 22 | 40 40 | 47 40 7 | 100 96 4 | 47 47 | 17 17 | 13 13 | 16 16 |
| Man-hours worked by production and development workers | 629 | 51 | . 45 | 62 | 82 | 227 | 78 | . 24 | 30 | 30 |
| Principal expenses, total\$1,000 Wages of production and | 1,455 | 102 | 78 | 179 | 212 | 542 | 124 | 58 | 77 | 83 |
| development workersdo Salaries of all other employeesdo | 810 102 | 53 7 | 64 | 124 | { 106 30 | 303 9 | 91 | 37 | 36 | 52 |
| Suppliesdodo | 293 173 | 36 | 1 | 36 | 10 53 | 169 46 | 9 | 12 | 5 17 | 16 4 |
| Purchased electric energydo | 31 | } 6 | 13 | 11 | 1 11 | 15 | 20 | 8 | 1 | ••• |
| Contract workdo | 46 | ••• | ••• | 8 | 2 | ••• | 4 | 1 | 20 | 11 28 |
| Purchased machinery installeddo Capital expenditures (development work, construction, machinery, | 158 | 16 | 18 | 11 | 16 | 14 | 9 | - 13 | 33 | 28 |
| and equipment)do | 194 127 | 27 16 | 7 7 | 12 8 | 16 16 | 14 14 | 10 7 | 21 12 | 60 33 | 27 14 |
| Horsepower rating of power equipment 5.1,000 | 23 | 1 | 2 | 2 | 2 | 4 | 3 | 1 | 6 | 2 |

ZLess than \$500.

Excludes establishments for 1954 with value of production and expenditures less than \$500; for 1939, less than \$2,500.

Represents value of products.

For 1954, represents value of products shipped plus capital expenditures less cost of supplies, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work.

Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

lincludes establishments in Maine, New Hampshire, Massachusetts, and Connecticut.
Lincludes the value of products other than peat and services amounting to less than \$20,000.
See table 1, footnote 3.
See table 1, footnote 4.
See table 1, footnote 5.

September 1955 Series:

NATIVE ASPHALT, BITUMENS, AND RELATED PRODUCTS

MI-14-9-1

Shipments of native asphalt, bitumens, and related products were 1,408 thousand tons in 1954, valued at \$6,424 thousand. The principal expenses of establishments primarily producing these products included \$2,027 thousand for wages and salaries, \$1,421 thousand for supplies and contract work, and \$222 thousand for fuel and electric energy. Expenditures of \$476 thousand were made for purchased machinery installed. Employment at these establishments averaged 539. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$552 thousand. Total horsepower of equipment available for use by these establishments was 31 thousand and total water intake for use, including mine water, was 38 million gallons. (See reverse for detailed statistics.)

Production of native asphalt, bitumens, and related products in 1954 represents nearly a threefold increase since 1939, the year covered by the preceding Census of Mineral Industries. During the same period, employment at such establishments declined by over one-third, but horsepower of power equipment more than doubled. In 1954, native asphalt, bitumens, and related products were produced in Alabama, Kentucky, Missouri, Oklahoma, Texas, and Utah. Total domestic production of native asphalt, bitumens, and related products in 1954 was more than twice the imports of 607 thousand tons of solid petroleum asphalt, most of which was imported from the Netherlands Antilles.

The native asphalt and bitumens industry as now defined in the Standard Industrial Classification of the Bureau of the Budget represents establishments primarily engaged in mining, milling, or otherwise preparing native asphalt and bitumens, including gilsonite, wurtzilite, grahamite, and ozokerite (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949). Of these minerals, only gilsonite was produced in 1954. It is not possible to show separate statistics for establishments primarily engaged in producing gilsonite without approximately disclosing the operations of individual companies.

At previous minerals censuses the native asphalt and bitumens industry was defined as including bituminous limestone and bituminous sandstone. Establishments primarily engaged in producing these products are now included in the crushed and broken limestone industry and the crushed and broken sandstone industry. The present report includes such establishments, presenting statistics comparable with previous years. Bituminous limestone production in 1954 represented about 84 percent of the total tonnage of native asphalt, bitumens, and related products, although only about 43 percent of the total value of these products. Over 98 percent of the tonnage of all native asphalt, bitumens, and related products in 1954 was prepared by crushing, pulverizing, or other methods prior to use.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Miscellaneous Nonmetallic Minerals", which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases will be issued for other industries within the next few months.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at approximately ten year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) in order to minimize duplication in canvassing mineral establishments. The census report form used for native asphalt, bitumens, and related products also provided the information required by the Bureau of Mines for its annual statistics on the production of these minerals.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

| Item . | 1954 | 1939 | 1929 | 1919 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------|--------------------|------------------|
| Native asphalt, bitumens, and related products Production | 1,417 1,408 | 495 (NA) | 819 (NA) | (NA) |
| | | | ` ' | , , |
| Value of shipments, total\$1,000 | 6,424 | ² 2,968 | ² 5,124 | ² 750 |
| Native asphalt, bitumens, and related productsdo Other products and servicesdo | ³ 6,424 (³) | 2,818 150 | 5,123 1 | 750 ••• |
| Value added in mineral production4do | 4,857 | 2,554 | 4,345 | 343 |
| Number of employees, total ⁵ | 539 | 853 | 1,306 | 387 |
| Production and development workers | 451 88. | 730 123 | 1,123 183 | 324 63 |
| Man-hours worked by production and development workers1,000 | 987 | 1,330 | (NA) | (NA) |
| Principal expenses, total\$1,000 | 3,670 | 1,307 | 2,620 | 838 |
| Wages of production and development workersdo | 1,443 | 608 285 | 1,255 586 | 295 136 |
| Salaries of all other employeesdosuppliesdo | 584 61,421 | 317 | 518 | 376 |
| Fueldo | 137 | 68 | 138 | 25 |
| Purchased electric energydod | 85 (⁶) | 28 1 | 39 84 | 6 |
| Purchased machinery installeddo | 476 | (NA) | (NA) | (NA) |
| Capital expenditures (development work, construction, machinery, and equipment)do | 552 | (NA) | (NA) | (NA) |
| For machinery and equipment onlydo | 414 | 89 | 182 | (NA) |
| Horsepower rating of power equipment? | 31 | 13 | 13 | 1 |
| Water intake ⁸ ,000,000 gallons | 38 | (NA) | (NA) | (NA) |

NA Not available.

¹Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.

Represents value of products.

The value of other products and services is included with the value of shipments of native asphalt, bitumens, and related products. This value amounted to less than one half of one percent of the total in which it is included.

4For 1954, represents value of products shipped plus capital expenditures less cost of supplies, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, 1929, and 1919, represents value of products less cost of supplies fuel purchased electric energy. supplies, fuel, purchased electric energy, and contract work.

5Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

The cost of contract work is included with the cost of supplies.

TRepresents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

TRepresents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy. ⁸Represents total water intake from publicly and privately owned systems, and mine water used for mineral preparation.

May 1956

Series:

MI-14-9-2

GYPSUM, MICA, VERMICULITE, ASBESTOS, DIATOMITE, PERLITE, AND MISCELLANEOUS NONMETALLIC MINERALS

GYPSUM--The value of shipments of the gypsum industry in 1954 (excluding mines operated as part of manufacturing plants) was \$6,629 thousand. Principal expenses of the gypsum industry included \$1,851 thousand for wages and salaries, \$924 thousand for supplies and minerals received for preparation, \$306 thousand for fuel and electric energy, and \$77 thousand for contract work. The cost of purchased machinery installed was \$2,395 thousand. Employment in this industry averaged 449. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$2,423 thousand. The total horsepower of equipment available for use was 28 thousand. Water intake for use during the year was 131 million gallons.

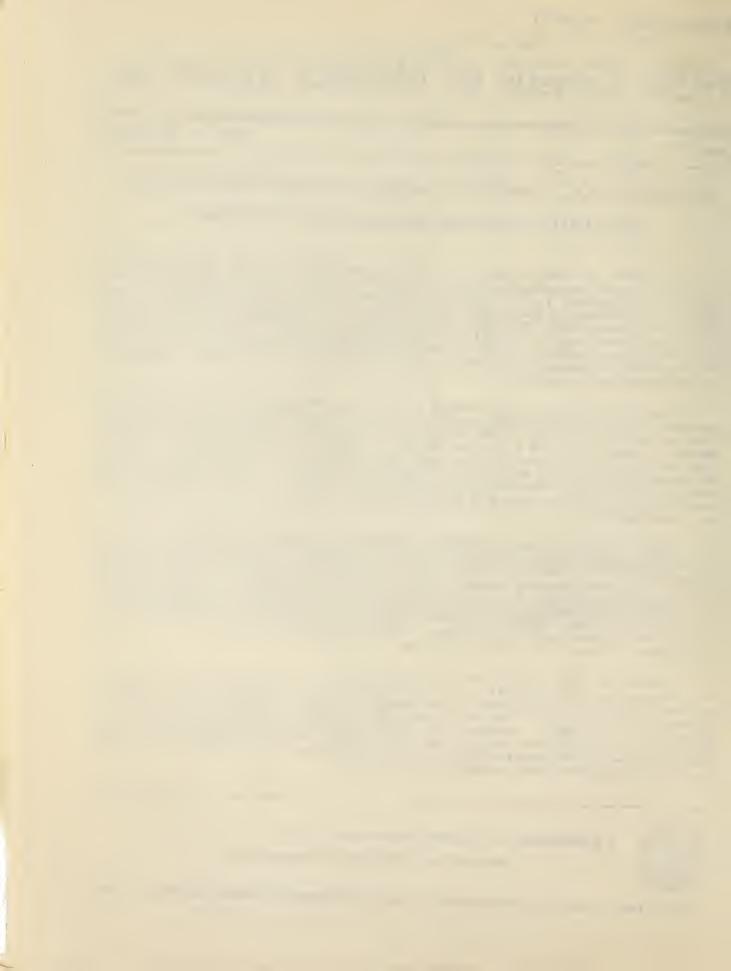
The 9,057 tons of gypsum produced in 1954 (including gypsum produced at mines operated as part of establishments classified in manufacturing industries) was nearly three times as large as production in 1939, the year covered by the preceding Census of Mineral Industries. Man-hours used to produce gypsum increased only 21 percent between 1939 and 1954, while wages paid to produce gypsum more than tripled over the same period. Gypsum was mined in 20 States, with Michigan the leading State; although in 4 States all gypsum mines were operated as part of manufacturing establishments. Imports of crude gypsum in 1954 totaled 3,360 thousand tons valued at \$4,870 thousand. Eighty-five percent of these imports were from Canada.

The "Gypsum" industry as defined in the Standard Industrial Classification of the Bureau of the Budget (see Standard Industrial Classification Manual, Volume II, Nonmanufacturing Industries, Executive Office of the President, Bureau of the Budget, May 1949) represents establishments primarily engaged in mining, quarrying, milling, or otherwise preparing gypsum (including gypsite). Calcining activities are excluded. However, if a mine is part of an establishment producing gypsum products, the entire establishment is classified in the manufacturing industry, "Gypsum products." In 1954, nearly three-fourths of all gypsum was mined at such manufacturing establishments. Selected statistics for such mines, as specified, are included in Tables 1 and 3 of this report, but not in Table 2.

MICA--The value of shipments of the mica industry in 1954 was \$4,125 thousand. Principal expenses included \$1,343 thousand for wages and salaries, \$598 thousand for supplies and minerals received for preparation, \$283 thousand for fuel and electric energy, and \$347 thousand for contract work. The cost of purchased machinery installed was \$474 thousand. Employment in this industry averaged 710. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$860 thousand. The total horsepower of equipment available for use was 17 thousand. Water intake for use during the year, including mine water, was 1,022 million gallons.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.



Employment in the mica industry in 1954 was over three times as large as employment in 1939, the year covered by the preceding Census of Mineral Industries. Available horsepower of power equipment increased by more than eightfold between 1939 and 1954. Establishments primarily producing mica in 1954 were located in 17 States, with North Carolina the leading State. Imports of unmanufactured mica in 1954 amounted to 11,123 thousand pounds valued at \$3,261 thousand, most of which was imported from India and Brazil.

The "Mica" industry as defined in the Standard Industrial Classification of the Bureau of the Budget (see reference above under "Gypsum") represents establishments primarily engaged in mining, milling, or otherwise preparing mica such as muscovite and phlogopite. About 95 percent of the value of all sheet and scrap mica mined was accounted for by establishments in the mica industry, with small amounts also produced in the feldspar and other mineral industries. Separate establishments engaged in grinding mica are classified in the manufacturing industry, "Minerals and earths: ground or otherwise treated." About 45 percent of all ground mica was ground at such establishments in 1954.

VERMICULITE AND MISCELLANEOUS NONMETALLIC MINERALS, NOT ELSEWHERE CLASSIFIED--The value of shipments of establishments classified in these industries in 1954 was \$24,860 thousand. Principal expenses included \$6,957 thousand for wages and salaries, \$4,910 thousand for supplies and minerals received for preparation, \$1,689 thousand for fuel and electric energy, and \$1,334 thousand for contract work. The cost of purchased machinery installed was \$1,441 thousand. Employment in these industries averaged 1,704. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$1,952 thousand. The total horsepower of equipment available for use in these industries was 76 thousand. Water intake for use during the year, including mine water, was 520 million gallons.

The "Vermiculite" industry as defined in the Standard Industrial Classification of the Bureau of the Budget (see reference above under "Gypsum") represents establishments primarily engaged in mining, milling, or otherwise preparing vermiculite. Establishments engaged in manufacturing exfoliated vermiculite are classified in the manufacturing industry, "Miscellaneous nonmetallic mineral products, not elsewhere classified." Separate statistics cannot be published for the "Vermiculite" industry in 1954 without approximately disclosing the operations of individual establishments.

The "Miscellaneous nonmetallic minerals, not elsewhere classified," industry as defined in the Standard Industrial Classification of the Bureau of the Budget (see reference above under "Gypsum") represents establishments primarily engaged in mining, quarrying, milling, or otherwise preparing miscellaneous nonmetallic minerals, not elsewhere classified, such as asbestos, diatomite, natural gem stones, graphite, greensand, perlite, and Iceland spar (optical grade calcite). Separate subindustry statistics have been tabulated for 1954 for "Asbestos," "Diatomite," and "Perlite." The data for "Vermiculite" are combined with subindustry figures for "Greensand and other minerals."

Asbestos--The value of shipments of establishments primarily engaged in producing asbestos in 1954 was \$4,877 thousand. Principal expenses for these establishments included \$1,402 thousand for wages and salaries, \$606 thousand for supplies, \$313 thousand for fuel and electric energy, and \$174 thousand for contract work. The cost of purchased machinery installed was \$248 thousand. Employment averaged 435. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$363 thousand. The total horsepower of equipment available for use was 17 thousand.

The 49 thousand tons of asbestos produced in 1954 was slightly more than three times as large as production in 1939, the year covered by the preceding Census of Mineral Industries. Employment at establishments primarily producing asbestos nearly tripled between 1939 and 1954, while horsepower of power equipment available in 1954 was more than four times as large as in 1939. Establishments primarily producing asbestos in 1954 were located in 5 States. However, about 80 percent of the asbestos produced was from Vermont. Imports of asbestos in 1954 amounted to 678 thousand tons valued at \$55,857 thousand, most of which was imported from Canada.



Diatomite-- The value of shipments of establishments primarily engaged in producing diatomite in 1954 was \$14,784 thousand. Principal expenses of these establishments included \$3,880 thousand for wages and salaries, \$3,690 thousand for supplies and minerals received for preparation, \$1,042 thousand for fuel and electric energy, and \$858 thousand for contract work. The cost of purchased machinery installed was \$1,036 thousand. Employment averaged 864. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$1,075 thousand. The total horsepower of equipment available for use was 38 thousand. Water intake for use during the year was 143 million gallons.

The total tonnage of diatomite produced in 1954 was over three and one-half times as large as production in 1939, the year covered by the preceding Census of Mineral Industries. Employment at establishments primarily engaged in producing diatomite more than doubled between 1939 and 1954, while available horsepower of power equipment increased more than fivefold between 1939 and 1954. Establishments primarily producing diatomite in 1954 were located in 5 States, with California the leading State.

Perlite--The value of shipments of establishments primarily engaged in producing perlite in 1954 was \$2,259 thousand. Principal expenses included \$486 thousand for wages and salaries, \$517 thousand for supplies and contract work, and \$148 thousand for fuel and electric energy. The cost of purchased machinery installed was \$69 thousand. Employment averaged 123. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$96 thousand. The total horsepower of equipment available for use was 7 thousand. Establishments primarily producing perlite in 1954 were located in 19 States, with New Mexico the leading State.

Vermiculite, Greensand, and Other Minerals--The value of shipments of establishments primarily engaged in producing vermiculite, greensand, and miscellaneous nonmetallic minerals (graphite, natural gem stones, and calcite) in 1954 was \$2,940 thousand. Principal expenses included \$1,189 thousand for wages and salaries; \$399 thousand for supplies, minerals received for preparation,: and contract work; \$186 thousand for fuel and electric energy. The cost of purchased machinery installed was \$88 thousand. Employment averaged 282. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$418 thousand. The total horsepower of equipment available for use was 14 thousand. Water intake for use during the year was 329 million gallons.

GENERAL--These statistics are derived from preliminary tabulations of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures on gypsum, mica, asbestos, diatomite, perlite, and miscellaneous nonmetallic minerals will appear in the Census bulletin, "Miscellaneous Nonmetallic Minerals." This bulletin will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries.

The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years. The 1954 minerals census was conducted by the Bureau of the Census with the cooperation of the Bureau of Mines (U. S. Department of the Interior) in order to minimize duplication in canvassing mineral establishments. The census report form used for the mica industry also provided information required by the Bureau of Mines for its annual statistics on mica.



| alerni | | Gypsum industry . | | | | | | | | |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------|---------------------|-----------------------|--|--|--|
| | | | 1954 | | | | | | | |
| Line no. | Item | Total | Mines and plants classified in mineral industries | Mines included in establish- ments classified in manu- facturing industries | 1939 | 1929 | 1919 | | | |
| | Cypsum | | | | | | | | | |
| 1 2 | Production | 9,057 3,438 | 2,487 2,479 | 6,570 959 | 3,302 (NA) | 5,152 (NA) | 2,420 (NA) | | | |
| 3 | Value of shipments ¹ \$1,000 | 10,314 | ¹ 6,629 | 3,685 | 4,569 | 5,740 | 6,806 | | | |
| 4 | Value added in mining ² do | (NA) | 5,350 | (NA) | 3,756 | 4,516 | 4,612 | | | |
| 5 | Number of employees, total ³ | (NA) | 449 | (NA) | 1,424 | 2,212 | 2,473 | | | |
| 6 7 | Production and development workers | (NA) (NA) | 399 50 | (NA) (NA) | 1,327 97 | 2,078 134 | 2,191 282 | | | |
| 8 | Man-hours worked by production and dsvelopment workers1,000 | 2,984 | 926 | 2,058 | 2,466 | (NA) | (NA) | | | |
| 9 | Principal expenses, total\$1,000 | (NA) | 3,158 | (NA) | 2,670 | 4,159 | 5,227 | | | |
| 10 11 12 | Wages of production and development workersdo Salaries of all other employeesdo Supplies and minerals received for preparation ⁴ do | 5,572 (NA) | 1,567 284 (924 | 4,005 (NA) | 1,640 217 624 | 2,628 307 795 | 2,478 555 1.530 | | | |
| 13 14 15 | Fueldo Purchased electric energydo Contract workdo | 4,247 | 171 135 77 | 2,940 | 37 146 6 | 137 285 7 | 516 144 4 | | | |
| 16 | Purchased machinery installeddo | (NA) | 2,395 | (NA) | (NA) | (NA) | (NA) | | | |
| 17 | Capital expenditures (development work, construction, machinery, and equipment)do | (NA) | 2,423 | (NA) | (NA) | (NA) | (NA) | | | |
| 18 | For machinery and equipment onlydo | (NA) | 2,362 | (NA) | 277 | 578 | (NA) | | | |
| 19 | Horsepower rating of power equipment ⁶ | (NA) | 28 | (NA) | 29 | 26 | 15 | | | |
| 20 | Water intaks ⁷ ,1,000,000 gallons | (NA) | 131 | (NA) | (NA) | (NA) | (NA) | | | |

DWithheld to avoid approximately disclosing figures of individual companies.

Namot available.

Zies than 500.

¹For 1954, figures represent value of shipments of products primary to each industry or subindustry and the value of secondary products shipments and services. Figures for years prior to 1954 represent value of production and services.

²For 1954, represents value of products shipped plus capital expenditures less cost of supplies, minerals received for preparation, fuel, purchased electric energy, contract work, and purchased machinery installed; for 1939, 1929, 1919, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "Value added," as computed for 1954, represents the value added during the year in each industry by mining and preparing the primary products of these industries, producing other products, performing services for others, and in development of mineral properties.



NONMETALLIC MINERALS INDUSTRIES IN THE UNITED STATES: 1954, 1939, 1929, AND 1919

than \$2,500; and for 1919, leee than \$500 for valus of production and lese than \$5,000 for coet of development)

| Mica industry | | | | Vermiculite and miscellaneoue nonmetallic minerale, not eleewhers claesified, industries | | | | | | | | | |
|-----------------------------------------|------------------------------------|-----------------------------|-----------------------------|------------------------------------------------------------------------------------------|------------------------------------------|----------------------------------|----------------------------------|--------------------------|----------------------------------------------|-----------------------------------------|----------------------------------------|-------------------------------------------------------------------------|----------------------------------|
| | | | | Aebeetoe subinduetry | | | | | Diato eubind | | | | |
| 1954 | 1939 | 1929 | 1919 | Total, 1954 | 1954 .1939 | | 1929 | 1919 | 1954 | 1939, | Perlite sub- industry, 1954 | Vermiculite industry and greensand and other minerals eubindustry, 1954 | Line no. |
| | | | | | | | | | | | | | |
| ::: | ::: | ::: | ::: | | ::: | ••• | ::: | ••• | ::: | • • • • • • • • • • • • • • • • • • • • | ::: | ::: | 2 |
| 4,125 | 327 | 516 | 607 | 24,860 | 4,877 | 492 | 397 | 250 | 14,784 | 2,018 | 2,259 | 2,940 | 3 |
| 3,283 | 276 | 415 | 469 | 17,438 | 3,899 | 341 | 319 | 198 | 9,233 | 1,393 | 1,621 | 2,685 | 4 |
| 710 | 210 | 249 | 488 | 1,704 | 435 | 169 | 211 | 160 | 864 | 361 | 123 | 282 | 5 |
| 670 40 | 190 20 | 226 23 | 448 40 | 1,374 330 | 394 41 | 160 9 | 195 16 | 146 14 | 635 229 | 299 62 | 101 22 | 244 38 | 6 7 |
| 1,197 | 361 | (NA) | (NA) | 2,703 | 754 | 344 | (NA) | (NA) | 1,206 | 751 | 241 | 502 | 8 |
| 2,571 | 189 | 354 | 473 | 14,890 | 2,495 | 320 | 349 | 173 | 9,470 | 1,101 | 1,151 | . 1,774 | 9 |
| 1,256 87 598 151 132 347 | 118 20 25 10 16 (Z) | 195 58 65 18 18 | 288 47 108 21 2 | 5,258 1,699 4,910 967 722 1,334 | 1,164 238 606 153 160 174 | 151 18 86 22 40 3 | 237 34 36 27 13 2 | 92 29 47 3 2 | 2,718 1,162 3,690 590 452 858 | 338 138 . 446 96 83 | 369 117 5517 106 42 (5) | 1,007 182 *399 118 68 (*) | 10 11 12 13 14 15 |
| -474 | (NA) | (NA) | (NA) | 1,441 | 248 | (NA) | (NA) | (NA) | 1,036 | (NA) | 69 | 88 | 16 |
| 860 | (NA) | (NA) | (NA) | 1,952 | 363 | (NA) | (NA) | (NA) | 1,075 | (NA) | 96 | 418 | 17 |
| 417 | 9 | 6 | (NA) | 1,028 | 200 | 13 | ,89 | (NA) | 724 | 48 | 67 | . 37 | 18 |
| 17 | 2 | 2 | 1 | 76 | 17 | 4 | 2 | (z) | 38 | 7 | 7 | 14 | 19 |
| 1,022 | (NA) | (NA) | (NA) | 520 | (D) | (NA) | (NA) | (NA) | 143 | (NA) | (D) | 329 | 20 |

Represente an average of 12 monthly figuree for the payroll ending nearest the 15th of each month.

Figures for years prior to 1954 exclude the cost of minerals received for preparation.

Figures for contract work is included with the cost of supplies.

Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

Represents total water intake from publicly and privately owned systems, and mine water used for mineral preparation.



| | | Gypsum industry | | | | | | |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------|--|--|--|
| Line no. | Item | United States, | Northeast, North Central, and South (New York, Michigan, Virginia, Arkansas, Louisiana, Oklahoma, and Texas) | Mountain (Montana, Idano, Wyoming, Colorado, New Mexico, Arizona, and Nevada) | Pacific (Washington and California) | | | |
| 1 2 | Gypsum Production | 2,487 2,479 | 1,504 1,498 | 484 484 | 499 497 | | | |
| 3 | Value of shipments1\$1,000 | 6,629 | 3,955 | 1,664 | 1,010 | | | |
| 4 | Value added in mining ² do | 5,350 | 3,162 | 1,372 | 816 | | | |
| 5 | Number of employees, total ³ | 449 | 303 | 92 | 54 | | | |
| 6 7 | Production and development workers | 399 50 | 278 . 25 | 82 10 | 39 15 | | | |
| 8 | Man-hours worked by production and development workers1,000 | 926 | 663 | 174 | 89 | | | |
| 9 | Principal expenses, total\$1,000 | 3,158 | 2,024 | 696 | 438 | | | |
| 10 11 12 13 14 15 | Wages of production and development workersdo Salaries of all other employeesdo Supplies and minerals received for preparationdo Fueldo Purchased electric energydo. Contract workdodo | 1,567 284 924 171 135 77 | 1,082 138 567 80 122 35 | 339 61 4235 61 (4) | 146 85 4164 43 (4) | | | |
| 16 | Purchased machinery installeddo | 2,395 | 2,056 | 237 | 102 | | | |
| 17 | Capital expenditures (development work, construction, machinery, and equipment)do | 2,423 | 2,067 | 241 | 115 | | | |
| 18 | For machinery and equipment only | 2,362 | 2,033 | 234 | 95 | | | |
| 19 | Horsepower rating of power equipment ⁵ 1,000 | 28 | 14 | . 10 | 4 | | | |
| 20 | Water intake ⁶ 1,000,000 gallons | 131 | (D) | (D) | ••• | | | |



| | | | | | | | | | · | |
|----|-----------------------------------------|--------------------|----------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------|----------------------------------------------------------|-------------|
| | | | Mica ir | ndustry | | | Diat | omite subindust | ry | |
| | | Northeast and | North Central | Sc | ruth | West | | | | |
| S. | nited tates, total | New Hampshire | Maine, Connecticut, Pemmsylvania, and South Dakota | North Carolina | Maryland; Virginia, South Carolina, Georgia, and Alabama | (Montana, Idaho, Colorado, New Mexico, Arizona, and California) | United States, total | Mountain (Arizona and Nevada) | Pacific (Washington, Oregon, and California) | Line no. |
| | ••• | | | | | ••• | 1 | ••• | | 1 |
| | | | | ::: | | | | | | 2 |
| | 4,125 | 218 | 211 | 3,093 | 437 | 166 | 14,784 | 1,723 | 13,061 | 3 |
| | 3,283 | 175 | 183 | 2,548 | 183 | 194 | 9,233 | 1,039 | 8,194 | 4 |
| | 710 | 49 | 30 | 556 | 49 | 26 | 864 | 96 | 768 | 5 |
| | 670 40 | } 49 | 30 | { 523 33 | } 49 | { 23 3 | 635 229 | 82 14 | 553 · 215 | 6 7 |
| | 1,197 | 86 | 46 | 906 | 115 | 44 | 1,206 | 181 | 1,025 | 8 |
| | 2,571 | 140 | 118 | 1,611 | 429 | 273 | 9,470 | 1,169 | 8,301 | 9 |
| { | 1,256 87 598 151 132 347 | 93 1 40 6 | 68 13 429 8 (4) | 905 58 297 113 98 140 | 119 7 4256 47 (4) | 71 8 18 11 165 | 2,718 1,162 3,690 590 452 858 | 389 86 506 102 47 39 | 2,329 1,076 3,184 488 405 819 | 12 |
| | 474 | 4 | 10 | 223 | 33 | , 204 | 1,036 | 134 | 902 | 16 |
| | 860 | 7 | 19 | 326 | 82 | 426 | 1,075 | 144 | 931 | 17 |
| | 417 | 4 | 10 | 182 | 26 | 195 | 724 | 93 | 631 | 18 |
| | 17 | 1 | 1 | 12 | 2 | 1 | 38 | 5 | 33 | 19 |
| | 1,022 | (D) | ••• | 848 | (D) | (D) | 143 | (D) | (D) | 20 |

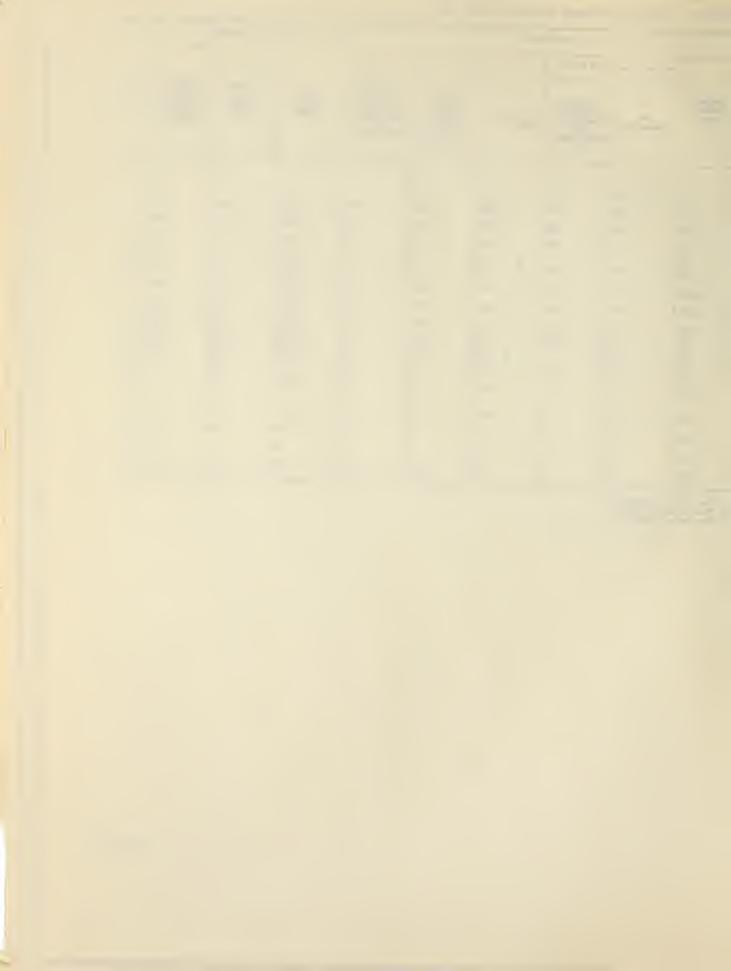


Table 3.--QUANTITY AND VALUE OF GYPSUM, MICA, ASBESTOS, DIATOMITE, GREENSAND MARL, PERLITE, AND MISCELLAMEOUS NONMETALLIC MINERALS: 1954 AND 1939

(The figures for each product in this table include production in the mineral industry to which the product is primary and, where applicable, production reported as secondary products in other mineral industries or in manufacturing industries.)

| | | | 1954 | 1939 | | | |
|---------------------------------------------------------------------|------------------|------------|------------|-----------------------------------------------|--------------|-----------------------------------------------|--|
| Product | Unit of | Production | | nts and at transfers | production | | |
| | meashte | (quantity) | Quantity | Value f.o.b. mine or plant (\$1,000) | Quantity | Value f.o.b. mine or plant (\$1,000) | |
| Gypsum (crude), including gypsite and anhydrite, total | 1,000 short tons | 9,057 | 3,438 | 10,301 | 3,314 | 4,580 | |
| Produced by mines and plants classified in mineral industries | do | 2,487 | 2,479 | 6,616 | (NA) |) (NA) | |
| classified in manufacturing industries | do | 6,570 | 959 | 3,685 | (NA) | (NA) | |
| Hand-cobbed mica | 1,000 pounds | 927 | 927 | 244 | | | |
| Full-trim sheet mica equivalent | do | 42 | ١ | ••• | | | |
| Sheet mica, total | do | 462 | 458 | 2,254 | 127 | 436 | |
| Punch, circle, and washerFull-trim, half-trim, and other sheet mica | do | 291 171 | 287 171 | 41 2,213 | | 450 | |
| Scrap (or flake) mica | 1,000 short tons | 55 | 55 | 746 | | | |
| Ground mica | do | 81 | 81 | 4,694 | (NA) | (NA) | |
| Asbestos, total | do | 49 | 50 | ² 4,877 | 16 | 498 | |
| Chrysotile | do | 44 5 | 45 5 | ² 4,795 82 | (NA) (NA) | (NA) (NA) | |
| Diatomite Crude Prepared | do | 437 361 | } ³364 | ³ 14,562 | 99 | 2,024 | |
| Greensand marl | do | . 4 | 4 | 196 | 4 | 285 | |
| Perlite (crude) | do | 288 | 288 | €2,149 | (NA) | (NA) | |
| Miscellaneous nonmetallic minerals4 | | | ••• | 2,742 | ••• | (NA) | |

NA Not available.

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, \$300

DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS WASHINGTON 28, D. C. OFFICIAL BUSINESS

[&]quot;Not available.

Represents thousands of short tons.

Includes the value of secondary products of the asbestos industry amounting to less than one-tenth of one percent of this total value.

Prepresents net shipments of crude and prepared distomite. Net shipments are equal to shipments and interplant transfers less crude minerals received from other establishments for preparation. Crude distomite accounts for less than one percent of the total quantity and value of crude and prepared distomite shipped.

Includes vermiculite, graphite, gem materials, and calcite (Iceland spar).



1954 Census of Mineral Industries

May 1956

Series:

0

MI-14-9-3

TALC, SOAPSTONE, AND PYROPHYLLITE

The value of shipments of the talc, soapstone, and pyrophyllite industry in 1954 was \$11,819 thousand. The principal expenses of the industry included \$4,794 thousand for wages and salaries, \$1,671 thousand for supplies, \$256 thousand for minerals received for preparation, \$705 thousand for fuel and purchased electric energy, and \$412 thousand for contract work. The cost of purchased machinery installed was \$486 thousand. Employment in the industry averaged over 1,450. Capital expenditures for exploration and development work, new construction, and new and used machinery amounted to \$1,197 thousand. The total horsepower of equipment available for use in the industry was 36 thousand and total water intake for use during the year, including mine water, was 324 million gallons.

The 606 thousand tons of net shipments of talc, soapstone, and pyrophyllite in 1954 was two and one-third times as large as production in 1939, the year covered by the preceding Census of Mineral Industries. Employment in the talc, soapstone, and pyrophyllite industry increased by about one-quarter between 1939 and 1954, while horsepower of power equipment available tripled between 1939 and 1954.

Establishments primarily engaged in producing talc, soapstone, and pyrophyllite in 1954 were located in 12 States with New York, Virginia, North Carolina, and California the leading States. Imports of talc, soapstone, and pyrophyllite amounted to 22 thousand tons, valued at \$678 thousand, over three-fourths of which was imported from Italy.

The talc, soapstone, and pyrophyllite industry as defined in the Standard Industrial Classification represents establishments primarily engaged i. mining, quarrying, milling, or otherwise preparing talc (including steatite), soapstone, or pyrophyllite. Dimension soapstone is included in this industry. Establishments engaged in grinding talc, soapstone, or pyrophyllite which do not include a mine are classified in the manufacturing industry, "Minerals and earths: ground or otherwise treated."

Separate statistics are shown in this release for crude ore produced by establishments in the mineral industries; for crushed, sawed, and ground talc, soapstone, and pyrophyllite produced by establishments in the talc, soapstone, and pyrophyllite industry; and for ground talc, soapstone, and pyrophyllite produced by establishments classified in the manufacturing industries. Net shipments figures, representing talc, soapstone, and pyrophyllite available to consumers outside of the talc, soapstone, and pyrophyllite industry are presented in table 3. Over 75 percent of the net shipments in 1954 represented ground talc, soapstone, and pyrophyllite; about 23 percent was crude ore; and the remainder was crushed and sawed talc, soapstone, and pyrophyllite. About 77 percent of all crude talc, soapstone, and pyrophyllite produced in 1954 was prepared by establishments in the talc, soapstone, and pyrophyllite industry by one or more of the following methods: grinding, crushing, air separation, micronizing, drying, sawing, flotation, and gravity concentrating. In addition, establishments classified in manufacturing industries purchased crude or crushed talc, soapstone, and pyrophyllite and prepared this material by grinding. Of the total quantity of 579 thousand tons of ground talc, soapstone, and pyrophyllite available for consumers, almost 80 percent was shipped by establishments classified in the talc, soapstone, and pyrophyllite industry and the remainder by establishments classified in the manufacturing industries.

These statistics are derived from a preliminary tabulation of reports received in the 1954 Census of Mineral Industries. Final and more detailed figures will appear in the Census bulletin, "Miscellaneous Nonmetallic Minerals," which will be published and offered for sale by the Superintendent of Documents in the near future. Similar preliminary and final releases are being issued for other industries. The 1954 Census of Mineral Industries is the thirteenth such census of the United States. Prior to 1939, minerals censuses had been conducted at about ten-year intervals for a century. Present legislation provides for such a census every five years.



U. S. DEPARTMENT OF COMMERCE, Sinclair Weeks, Secretary.

BUREAU OF THE CENSUS, Robert W. Burgess, Director.

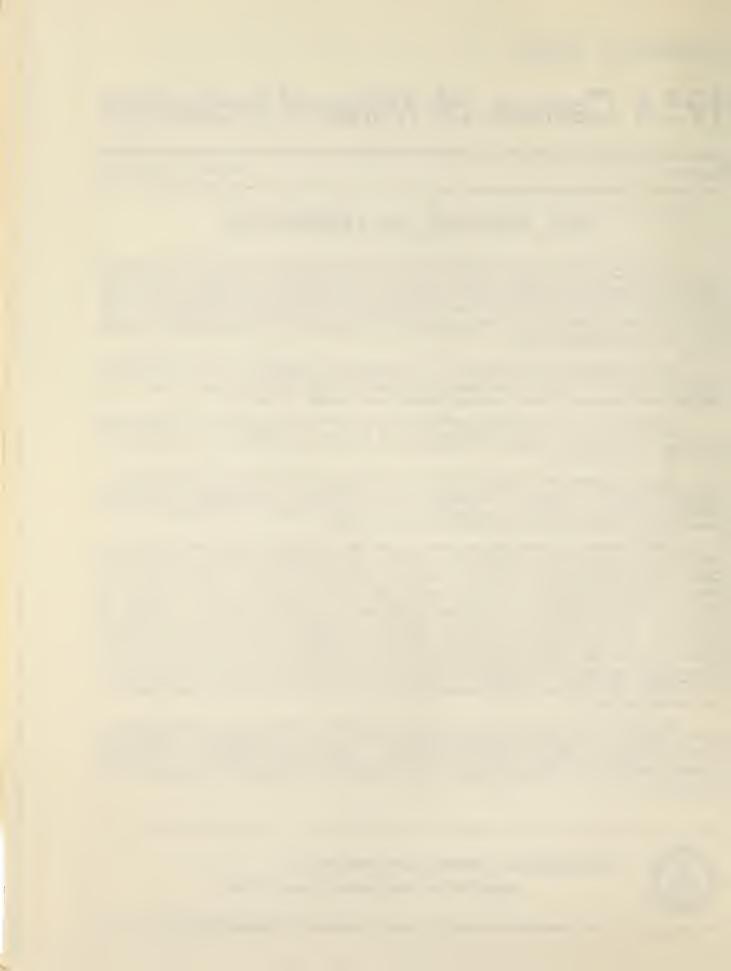


Table 1.--PRINCIPAL STATISTICS FOR THE TALC, SOAPSTONE, AND PYROPHYLLITE INDUSTRY IN THE UNITED STATES: 1954, 1939, 1929, AND 1919

(Excludes establishments for 1954 with value of production and with expenditures less than \$500; for 1939 and 1929, less than \$2,500; and for 1919, less than \$500 for value of production and less than \$5,000 for cost of development.)

| Item | 1954 | 1939 | 1929 | 1919 | |
|------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------|---------------------------------------------|----------------------------------------------|--|
| Net shipments of talc, soapstone, and pyrophylliteShort tons | ¹ 605,901 | ² 253,992 | ³ 243,075 | (NA) | |
| Value of shipments, total\$1,000 | 11,819 | ² 3,269 | ³ 2,688 | ³ 2,302 | |
| Talc, soapstone, and pyrophyllitedo | 11,819 | 3,088 181 | 2,625 63 | 2,296 6 | |
| Value added in mining4do | 9,486 | 2,441 | 2,012 | . 1,749 | |
| Number of employees, total ⁵ | 1,453 | 1,137 | 632 | 1,061 | |
| Production and development workers | 1,297 156 | 970 1 167 | 550 82 | 958 103 | |
| Man-hours worked by production and development workers | 2,778 | 2,068 | (NA) | . (NA) | |
| Principal expenses, total\$1,000 | 7,838 | 2,017 | 1,500 | 1,603 | |
| Wages of production and development workersdo Salaries of all other employeesdo Supplies | 4,141 653 1,671 256 238 467 412 | 807 382 619 (NA) 45 162 2 | 615 217 531 (NA) 29 99 17 | 835 215 345 (NA) 109 46 53 | |
| Purchased machinery installeddo | 486 | (NA) | · (NA) | (NA) | |
| Capital expenditures (development work, construction, machinery, and equipment)do | 1,197 | (NA) | (NA) | (NA) | |
| For machinery and equipment onlydo | 444 | 102 | 35 | (NA) | |
| Horsepower rating of power equipment ⁶ 1,000 | 36 | 12 | 11 | . 7 | |
| Water intake ⁷ ,1,000,000 gallons | 324 | (NA) | (NA) | (NA) | |

For 1954, represents net shipments of tale, sompstone, and pyrophyllite. Net shipments are "Shipments and interplant transfers" less "Crude and ground ore received from other establishments for preparation" (see table 3).

²For 1939, represents production of crude talc and soapstone not prepared at the establishment where produced; and production of ground, sawed, and manufactured talc, soapstone, and pyrophyllite recovered from crude materials produced during that year. Represents production.

For 1954, represents value of products shipped plus capital expenditures less cost of supplies; talc, soapstone, and pyrophyllite received for preparation; fuel; purchased electric energy; contract work; and purchased machinery installed. For 1939, 1929, and 1919, represents value of products less cost of supplies, fuel, purchased electric energy, and contract work. Thus, "Value added," as computed for 1954, represents the value added during the year in the tale, scapstone, and pyrophyllite industry by mining and preparing tale, scapstone, and pyrophyllite and in development of mineral properties.

*Represents an average of 12 monthly figures for the payroll ending nearest the 15th of each month.

6Represents the horsepower of all prime movers plus the horsepower of electric motors driven by purchased energy.

7Represents total water intake from publicly and privately owned systems, and mine water used for mineral preparation.



Table 2.--PRINCIPAL STATISTICS FOR THE TALC, SOAPSTONE, AND PYROPHYLLITE INDUSTRY, FOR GEOGRAPHIC DIVISIONS AND STATES: 1954

| | | Northeast | | South | | West | | |
|-----------------------------------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------------------|-------------------------------------|--------------------------------------|---------------------------------------|----------------------------------------|------------------------------------------|--|
| Item | United States, total (Vermont and New York) | | North Carolina | Maryland and Virginia | Georgia, Arkansas, and Texas | California | Montana, Nevada, and Washington | |
| Production of crude talc, soapstone, and pyrophylliteShort tons | 610,019 | 228,080 | 107,695 | 43,821 | 75,749 | 134,713 | 19,961 | |
| Value of shipments\$1,000 | 11,819 | 4,760 | 1,960 | 2,321 | 896 | 1,402 | 480 | |
| Value added in mining ¹ do | 9,486 | 3,959 | . 1,425 | 1,990 | 641 | 1,133 | 338 | |
| Number of employees, total ² | 1,453 | 428 | 227 | 516 | , 130 | 114 | 38 | |
| Production and development workers | 1,297 156 | 3 6 7 61 | 204 23 | 474 42 | 109 21 | 106 8 | 37 | |
| Man-hours worked by production and development workers | 2,778 | . 824 | 448 | 973 | 241 | 218 | 74 | |
| Principal expenses, total\$1,000 | 7,838 | 3,172 | 1,184 | 1,832 | 576 | 770 | 304 | |
| Wages of production and development workers | 4,141 653 1,671 256 238 467 412 | 1,661 219 ³ 856 113 323 (³) | 507 132 393 32 37 83 | 1,149 170 3401 45 67 | 250 84 3194 } 48 (3) | 455 42 { 161 29 83 | 119 6 156 } 11 12 | |
| Purchased machinery installeddo | 486 | 226 | 80 | 65 | 32 | : 57 | 26 | |
| Capital expenditures (development work, construction, machinery, and equipment)do | 1,197 | 71 7 | 90 | 247 | 19 | 61 | 63 | |
| For machinery and equipment onlydo | 444 | 224 | 80 | . 52 | 17 | 48 | 23 | |
| Horsepower rating of power equipment41,000 | 36 | 11 | . 5 | . 8 | 4 | 6 | 2 | |
| Water intake ⁵ 1,000,000 gallons | 324 | (D) | (D) | (D) | ••• | (D) | ••• | |

Dwithheld to avoid approximately disclosing figures of individual companies.

See table 1, footnote 4. •

See table 1, footnote 5.

The cost of contract work is included with the cost of supplies.

See table 1, footnote 6.

See table 1, footnote 7.



Table 3.--QUANTITY AND VALUE OF TALC, SOAPSTONE, AND PYROPHYLLITE IN THE UNITED STATES: 1954 AND 1939

| the state of the s | | | | ···- | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------------------------------------------|--------------------------------------|--------------------------------------------------|---------------------------------|--------------------------------------------------|-----------------------------|--------------------------------------------------|--|--|
| | To | tal | Ta | lc | Soap | stone | Pyrophyllite | | | |
| . Item | Quantity (short tons) | Value f.o.b. mine or plant (\$1,000) | Quantity (short tons) | Value f.o.b. mine or plant (\$1,000) | Quantity (short tons) | Value f.o.b. mine or plant (\$1,000) | Quantity (short tons) | Value f.o.b. mine or plant (\$1,000) | | |
| | | | 1954 | | | | | | | |
| Ore mined and processed at establishments classified in the mineral industries Production | | | ` | | | | | | | |
| Crude Crushed Sawed. Ground | 610,019 189,796 7,010 462,282 | ••• | 383,568 112,823 (D) 272,920 | ••• | 106,877 (D) (D) 83,535 | ••• | 119,574 (D) 105,827 | • • • | | |
| Shipments and interplant transfers Crude | (D) 3,055 7,049 (D) | (D), 25 2,217 (D) | (D) (D) (D) (D) | (D) (D) (D) (D) | 18,515 (D) (D) 84,062 | 88 (D) (D) 829 | (D) (D) 103,130 | (D) (D) | | |
| Crude ore prepared which was produced at the same establishment ² | 485,093 | ••• | 289,782 | ••• | 87,366 | ••• | 107,945 | ••• | | |
| Crude and ground ore received from other establishments for preparation | 17,005 | 256 | (D) | (D) | (D) | (D) | (D) | (D) | | |
| Net shipments, total ³ | 605,901 | 11,574 | 387,758 | 7,148 | (D) | (D) | (D) | (D) | | |
| Crude Crushed Sawed Ground | 140,414 3,055 7,049 455,383 | 1,271 25 2,217 8,061 | 116,779 (D) (D) 268,191 | 1,131 (D) (D) 5,746 | (D) (D) (D) 84,062 | (D) (D) (D) 829 | (D) (D) 103,130 | (D) (D) 1,486 | | |
| Ore processed at establishments classified in the manufacturing industries Shipments and interplant transfers (ground) | 123,326 | 2,776 | 99,957 | 2,321 | (D) | (D) | (D) | (D) | | |
| | | | | | 39 | 1 | | | | |
| Production, total ⁴ | 256,375 | 3,103 | 185,000 | 2,100 | 33,000 | 700 | 38,000 | 300 | | |
| Crude ⁵ | 14,521 8,747 230,724 | 81 658 2,349 | (NA) (NA) (NA) | (NA) (NA) (NA) | (NA) (NA) (NA) | (NA) (NA) (NA) | (NA) | (NA) | | |
| preparation)6 | 2,383 | 15 | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | | |

 $^{\text{D}\text{W}}\textsc{i}\textsc{t}\textsc{i}\textsc{i}\textsc{i}\textsc{i}\textsc{i}\textsc{o}\textsc{i}\textsc{o}\textsc{i}\textsc{o}\textsc{o}\textsc{i}\textsc{o$

crude ore.

3Represents "Shipments and interplant transfers" less "Crude and ground ore received from other establishments for preparation."

4The distribution by type of material is only approximate. However, it is based on a percentage distribution representing over 99 percent of the total tomage.

Represents only crude material not prepared at the establishment where produced.

Includes 2,327 toms, valued at \$10 thousand, from establishments too small to come within the scope of the 1939 minerals

¹⁰nly crude ore was shipped by establishments outside of the talc, soapstone, and pyrophyllite industry.

2 Includes 22,968 tons of talc and soapstone which was only sorted and screened. Shipments of this material are shown as

census.











U. S. Bur. of the Census 1954 census of mineral industries: preliminary Census Y 21065 UN3p 1954

